



RATE CASE JUSTIFICATION

Abuja Electricity Distribution Company Plc

July 2023

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1. AEDC Efficiency Performance

The business environment for energy utility companies has been particularly challenging since privatization. The sector has been characterized by non-cost reflective tariffs and huge collection losses. This has led to severe liquidity challenges and most Discos' significantly accumulated market liabilities.

1.1 Justification for the proposed new baseline ATC&C (Components, Historical information, studies undertaken if any, etc.)

The current aggregate technical, commercial, and collection losses (ATC&C Loss) are 42.80% based on the average of the last six months performance till June 2023 performance. For the period of rate adjustment, 2023 to 2028, AEDC was expected to cut its loss position from 42.80% to 18.95% i.e. loss reduction of 23.85% but will require a total investment amounting to ₦235.14bn. The below table depicts the expected loss improvements over the next five years upon implementation of the proposed rate design projects.

Details Project Category	Project Cost (₦)	Potential Loss Improvement		
		Technical Loss Reduction	Commercial & Collection Loss Reduction	ATC&C Loss Reduction
Network expansion and upgrade	58,100,000,000	5.89%		5.89%
Network maintenance, rehabilitation and reconfiguration	27,750,000,000	2.81%		2.81%
Supervisory Control and Data Acquisition (SCADA)	10,250,000,000	1.04%		1.04%
DT Metering Infrastructure and Energy Accounting	21,767,144,400	2.21%		2.21%
Protection of distribution system and Equipment	635,730,936	0.06%		0.06%
AMI Infrastructure	1,659,033,330	0.17%		0.17%
Obsolete metering deployment	36,406,340,000		3.69%	3.69%
Customers' metering deployment	64,470,151,080		6.54%	6.54%
Soft Costs	14,097,396,862		1.43%	1.43%
Total	235,135,796,608	12.19%	11.66%	23.85%

Table 1: Investment Size vs. ATC&C Loss Reduction

Assumptions:

In 2019, the business presented the Performance Improvement Plan (PIP), which requires a ₦100.7 billion investment, as a strategy to cut its ATC&C to 19% over five years. The amount of investment required to reduce losses by 1% was later extrapolated using the planned total investment with inflationary impact from 2019 to 2023 and the period's loss. As a result, the investment per 1% decrease in a loss target was projected to be ₦9.86 billion.

Assumptions - PIP Baseline:	Details
ATC&C Loss per PIP baseline	45.0%
Year-5 Target	26.0%
Service Improvement	19.0%
Investment Proposed (₦thds) as at 2019	100,720,000
Inflation Growth (Dec. 2019 - May. 2023)	86.0%
Revised investment proposed	187,303,860
Investment per 1% Loss Reduction (₦thds)	9,858,097.9

Table 2: Investment per 1% Loss Reduction

1.2 Comparative analysis of the proposed vs allowed and actual ATC&C

Performance Agreement Years	Baseline	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	Jun-23	2023 (Jul - Dec)	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Regulatory Loss Target - Dec. 2022 MYTO MR Order		19.27%	19.27%	15.87%	13.08%	13.08%	13.08%
ATC&C Loss Trajectory	42.80%	38.59%	31.12%	25.43%	21.27%	19.99%	18.95%
Investment Required (N'thds)		41,517,016.1	73,661,868.0	56,127,072.3	40,944,514.5	12,622,724.4	10,262,601.3

Table 3: Comparison of ATC&C Performance Loss Targets

The regulatory loss target for the time covered is 13.08% based on the December 2022 Minor Review MYTO, whereas AEDC expects to achieve an ATC&C loss of 18.95% by the end of year 5, 2028 from the baseline loss level of 42.8% with full execution of the investment required.

1.3 Where there is a divergence how will the short-term losses be treated?

With some divergence from the regulation loss target and AEDC's loss commitment, AEDC's loss will be decreased to 18.95% by the end year 5 i.e., 2028 as a result of the planned investment and other strategic efforts aimed at increasing efficiency. We expected that the difference between the regulatory loss target and the proposed loss commitment would be included in the Disco loss, which would then be used to determine the end-user tariff.

1.4 Presence of loss reduction trajectory (what is driving the loss reduction trajectory)

AEDC is exploring several innovative ideas to significantly improve its operations and ultimately loss reduction.

To arrive at this CAPEX plan, the following drivers were considered:

- i. **State of the Network:** Technical studies were conducted to determine the current state of the network for technical loss reduction and related investments required for network expansion planning.
- ii. **Metering Plan:** AEDC has identified metering as a strategy to reduce non-technical losses. Through the MAP, AEDC plans to deploy 400,212 meters across its network as well as DT meters for monitoring energy usage.
- iii. **Market Study:** Studies have been conducted to optimise the planned rollout of new connections ensuring that the maximum rate of new connections is made whilst still maintaining the financial and technical stability of AEDC and its network.
- iv. **Information Communications Technology (ICT) needs:** The business has assessed its ICT needs and the hardware and software components necessary to run an efficient utility.
- v. **Refurbishment/replacement:** Identification of existing assets that require that upgrade or replacement, especially the obsolete/faulty meters.
- vi. **Work tools and equipment:** The assessment of work tools and equipment required for both core services and support functions.

Other strategic initiatives in this regard are:

- i. **Franchising Strategy:** this focuses on improving collections in clusters with homogenous customer bases fed from the same feeder. This would take service delivery and commercial vigilance closer to the customer.

- II. **Rural Collection Strategy:** There is a dedicated strategy to deal with introducing payment discipline among customers (especially in rural areas)
- III. **Human Resource Capacity:** Improving Technical Skills, Soft Skills, and Cultural Re-Orientation is Crucial to Accomplishing AEDC's Strategic Objectives
- IV. **Mini-grid Strategy:** AEDC's mini-grid strategy is to facilitate the development of solutions/business models, which support the delivery of energy to augment grid supply and reduce ATC&C loss in clustered underserved areas such as markets, plazas, estates, etc. AEDC is working with developers and development partners including the Rural Electrification Agency to pilot various interconnected mini-grid models that will deliver improved service to customers.

Below is a table showing the project deployment plan and their expected efficient improvements.

Deployment Phase >>>	2023 (Jul - Dec)	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Loss Reduction Performance (running total)	4.21%	11.68%	17.38%	21.53%	22.81%	23.85%
Project Amount (₱m)	41,517,016	73,661,868	56,127,072	40,944,515	12,622,724	10,262,601
Network expansion and upgrade	✓	✓	✓	✓	✓	✓
Network maintenance, rehabilitation and reconfiguration	✓	✓	✓	✓	✓	✓
Supervisory Control and Data Acquisition (SCADA)	✓	✓	✓	✓	✓	✓
DT Metering Infrastructure and Energy Accounting	✓	✓	✓	✓	✓	✓
Protection of distribution system and Equipment	✓	✓	✓	✓		
AMI Infrastructure	✓	✓	✓			
Obsolete metering deployment		✓	✓	✓	✓	
Customers' metering deployment		✓	✓	✓		
Soft Costs		✓	✓	✓		
ATC&C Loss Trajectory	29.78%	22.31%	16.62%	12.46%	11.18%	10.14%

Table 4: Project Deployment Plan

1.5 Presence of loss reduction strategy (technical, commercial and collection)

I. Technical Loss Reduction

AEDC is embarking on a number of projects over the next five years to improve the quality and reliability of power supply. Implementing these initiatives will significantly reduce technical losses, increased operational performance, and improved customer service delivery throughout its franchise area.

The projects to be implemented are classified according to their project costs and their impact on loss reduction as follows:

Details	Potential Loss Improvement	
	Project Cost (₱)	Technical Loss Reduction
Network expansion and upgrade	58,100,000,000	5.89%
Network maintenance, rehabilitation and reconfiguration	27,750,000,000	2.81%
Supervisory Control and Data Acquisition (SCADA)	10,250,000,000	1.04%
DT Metering Infrastructure and Energy Accounting	21,767,144,400	2.21%
Protection of distribution system and Equipment	635,730,936	0.06%
AMI Infrastructure	1,659,033,330	0.17%
Total	120,161,908,666	12.19%

Table 5: Technical Loss Reduction Drive

II. Commercial and Collection (C&C) Loss Reduction

C&C results from unlawful connections by undocumented consumers, fraudulent meter bypassing, erroneous energy readings from faulty/obsolete meters, billing problems from incorrect readings, revenue understatement due to incorrect customer tariff classification, on-payment of electricity bills, and so on.

As a result, AEDC has launched several measures to minimize these losses via effective commercial vigilance and revenue protection tactics. Below are the major projects to address those with their loss reduction impact.

Details	Potential Loss Improvement	
	Project Cost (₹)	Commercial & Collection Loss Reduction
Obsolete metering deployment	36,406,340,000	3.69%
Customers' metering deployment	64,470,151,080	6.54%
Data clean-up cost/Enumeration	26,000,000	0.00%
RPU's Tools (Toolbox, Smartphones, Clamp)	18,155,000	0.00%
Vehicles - 351	7,588,000,000	0.77%
Source code for the billing platform	22,500,000	0.00%
HSSE	5,790,541,862	0.59%
Customer Centric Plan	311,000,000	0.03%
Other CAPEX Projects	341,200,000	0.03%
Total	114,973,887,942	11.66%

Table 6: Commercial and Collection Losses Reduction Drive

2. End-Use Meter Deployment

2.1 Analysis of Metering GAP

AEDC has a total population of 1,353,671 customers out of which 807,548 are metered representing 60% while the unmetered is 546,123 representing 40% of the total population. Find the table below.

Description	Number
Metered Customer	807,548
Unmetered Customer	546,123
Total Population	1,353,671

Table 7: Metering Gap

We have a 3-year plan to close out the metering gap of 546,123 and the obsolete meter replacement while taking into consideration the incremental new customers of 78,000 yearly as shown below.

Description	31-Dec-23	31-Dec-24	31-Dec-25	31-Dec-26	31-Dec-27	31-Dec-28
Buying Sim cards to smart enabled meters	70,070,000	329,600,180	303,333,940	70,980,000	70,980,000	70,980,000
Number of unmetered customer	72,000	215,789	258,334	78,000	78,000	78,000
Number of obsolete meters	5,000	146,409	75,000			
Total Number of meters	77,000	362,198	333,334	78,000	78,000	78,000
Cost of Meters	12,402,011,845	58,337,453,069	53,688,470,343	12,563,076,934	12,563,076,934	12,563,076,934
Total Cost (₹)	10,528,380,779	55,183,131,062	36,444,395,003	12,634,056,934	12,634,056,934	12,634,056,934

Table 8: Metering Investment

2.2 Strategy for Meter deployment

In line with Management's business improvement initiatives, AEDC has developed several strategies for customer metering with a view to closing the huge metering GAP and improving customer satisfaction.

2.2.1 Metering the Unmetered Customers:

In line with NERC regulation on the use of the MAP metering scheme, AEDC has been able to install over 289,000 meters both in MAP 1 and MAP 2. NMMP Phase 0 also contributed to over 100,000 customers being metered.

The delay in the commencement of NMMP phase 1 has made AEDC result in procuring about 3,000 meters for disco financing to mitigate the losses incurred by customers with obsolete meters and high consumptions being Cap billed.

AEDC has also made the meter procurement process very easy for customers to access by deploying a mobile MAP metering strategy in all its business districts to enable customers to get metered within 48 hours after payment.

2.3 Obsolete Meter Replacement.

In line with the Management's business improvement initiatives and NERC Regulations on Vendor Financing guidelines on Distribution Franchising in the Nigerian Electricity Supply Industry, AEDC has sought "No Objection" from NERC to engage Potential Vendors to undertake the replacement of these obsolete meters with a view to:

Supply and install the meters.

- I. Clean up and upgrade the network.
- II. Improve Revenue Assurance, Operational Intelligence.

This is geared towards closing the metering gap, improve collection efficiency/customer satisfaction and meet the targets specified by NERC in its Performance Monitoring Framework.

Presently, vendors have shown interest to provide meters under this initiative and a couple of vendors have submitted their proposals. AEDC is currently reviewing their submissions with the intent to engage some as soon as possible. Below are the criteria for selection and the benefits of this project.

Selection Criteria:

- I. Low financing cost
- II. Short Implementation Time Frame
- III. Good track record

Benefits:

- I. Improved customer satisfaction
- II. Improved collection efficiency

3. Energy Offtake

3.1 Current Short- and Long-Term Energy Requirements for the DisCos

The table below shows in the short term the actual average load (mW) from January to June 2023 and the projection based on the 588mW allocated to AEDC under the bilateral transition arrangement. The long-term projection covers 2024 to 2028, considering the recorded maximum load demand of 651mW in

Description	Short Term Energy Traded/Projections 2023							Long Term Energy Trade Projection				
	Jan-Jun'23 Average	Jul	Aug	Sep	Oct	Nov	Dec	2024	2025	2026	2027	2028
AEDC MYTO Allocation based on Nat. Grid Plan (mW)	502	588	588	588	588	588	588	600	615	630	640	651
Energy Traded/Projection (mWh/day/Annum)	13,319	15,610	15,610	15,610	15,610	15,610	15,610	15,929	16,327	16,725	16,991	17,283

Table 9: Energy Traded/Projections

Analysis of energy offtake – highest historical peak and highest peak in terms of MWh/day/annum. What was considered was the monthly highest energy offtake by AEDC between January to June 2023 and the daily highest peak was then deduced based on an average of 30 days per month.

Analysis of Energy Offtake (mWh)	
Highest Peak Monthly	399,565
Highest Peak Daily	13,319

Table 10: Capacity Off-take

3.1 Analysis of the Load Allocation Across Service Bands and Across Voltage Levels

Feeder Band	Load Allocation (mWh/h)	Ave Energy Offtake (mWh)	% Offtake
BAND-A	369.53	266,059.97	73.7%
BAND-B	57.31	41,261.55	11.4%
BAND-C	20.92	15,065.65	4.2%
BAND-D	47.73	34,368.76	9.5%
BAND-E	5.91	4,254.62	1.2%
LIFE-LINE	0.29	209.29	0.1%
Grand Total	501.69	361,219.84	100.0%

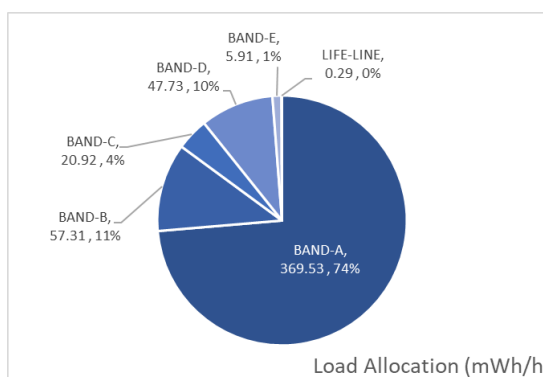


Table 11: Load Allocation

3.2 Plan for migrating feeders from lower service bands to higher ones (meeting service level commitments)

Service delivery performance is enhanced by the smart energy allocation strategy, where we deliberately assign energy to feeders and monitor availability on a monthly basis for consistency of service level deliveries. A feeder found consistent in higher service delivery is migrated appropriately to reflect the service level received by the attendant customers and then sustains the feeders at that level. This exercise is repeated and continuously on lower-level feeders until all AEDCs become band A feeders.

3.3 Investment plan to improve energy offtake and migration of customers to higher service bands.

Some quick wins capital investment to reinforce the networks for stability and at the same time engaged in network expansion projects to increase capacity offtakes on AEDC distribution networks, PIP refers. Operational strategies are being modified to manage the business by feeders, with an aim of improving feeder profitability which directly implies improvement in service band level deliveries.

Transition To Bilateral Contracts

AEDC has commenced negotiations with GenCos based on NERC's directive to procure 588mWh/h including the variance from the 393mWh/h allocated. 290mWh/h for the activated GenCos, 82mWh/h for Successor G and 21mWh/h for NIPP & Mabon. The discussions have progressed and AEDC is currently in the process of signing off the PPAs with GenCos. In addition, AEDC is exploring the option of engaging a bulk trade to consolidate its settlement points. For bilateral operations, it is unanimously agreed that a tripartite agreement will be entered into including the TCN.

Activated Contract	Not Activated
1. Ughelli (Transcorp)	1. Egbin (Sahara)
2. Shiroro, (NSP),	2. Geregu Gas
3. Jebba & Kainji (Mainstream)	3. FIPL Omoku
4. Okpai	
5. Azura	
6. Afam VI (NPDC)	
7. Olorunsogo Gas & Omotoso Gas (Pacific)	

Table 12: Generation Contract Type

3.4 Incorporation of the Embedded Generation Targets as Part of the Submission and Timelines for Deployment

The Nigerian electricity market is rapidly evolving into a decentralized system. The embedded Generation Target set by NERC requires all Discos to procure a minimum of 10% of the 2024 load from embedded generation sources (for AEDC, this is 54mW). AEDC is pursuing a DER strategy in response to this market and regulatory changes. AEDC and RMI have collaborated to develop several utility-enabled DER business models, they are.

- 3.4.1 Utility-Enabled Mini-grids,
- 3.4.2 Utility-Enabled Large C&I Customer DERs,
- 3.4.3 Commercial Street DERs,
- 3.4.4 Renewable Embedded Generation.

AEDC’s collections are currently not sufficient to meet its market obligations, which has led to liquidity challenges and a high ATC&C loss level of circa 42.8%. This could be a challenge to meeting the bilateral obligation if not checked.

3.5 Key network limitations including transmission interface constraints.

3.5.1 AEDC Interface Limitations

TCN	CAPACITY	TRANSFORMER	FDRS	PEAK LOAD (MW)	INJ. S/S	11KV FDRS	PEAK LOAD (MW)	LINE LOAD (MW)	REMARKS
OVERLOADED 11KV FEEDER AT E2 LUGBE INJECTION SUBSTATION									
AT3	2X100MVA, 1X45MVA	100MVA TR3	H21	29.7MW	E2 LUGBE 2X15MVA INJ S/S	FDR 22	8.0	NIL	11kv FDR 22 ON 15MVA TR1 IS
							TOTAL	8.0	
OVERLOADED 33KV FDR K4 FROM AT9 KARU TS									
AT9	2X60MVA	60MVA TR2	K4	30	A23 INJ. S/S 2X15MVA(G WAGWALA PE)	FDR2	3.0	16.0	33kv FDR K4 IS OVERLOADED
						FDR8	1.0		
						FDR9	2.7		
						TOTAL	6.7		
						J22 INJ. S/S 2X15MVA (MARARABA)	FDR1		
						FDR2	4.7		
						FDR3	4.4		
						FDR4	4.4		
							TOTAL	19.2	
41.9MW									
OVERLOADED 11KV FEEDER AT KANTOMA INJECTION SUBSTATION SULEJA									
AT6	7.5MVA TR1, 45MVA TR2, 30MVA TR3 AND	15MVA TR1	SULEJA TOWNSHIP FDR	7.9	2X15MVA INJ S/S KANTOMA	MADALL/ZUI	7.5	0.0	15MVA TR1 AND 11KV FEEDERS AT KANTOMA
						RAFIN SANYI	7.9		
						TOTAL	15.4		
OVERLOADED 33KV BWARI FEEDER AT KUBWA TS									
AT4	2X60MVA TR1 & TR2	60MVA TR2	BWARI	20	K3 2X15MVA INJ S/S	FDR 1	1.8	19.0	33kv BWARI FDR IS OVERLOADED
						FDR 2	4.0		
						FDR 3	0.7		
							TOTAL	6.5	
OVERLOADED 33KV FEEDER H33 FROM APO TS									
AT3	2X100MVA, 1X45MVA	100MVA TR4	H33	34.3MW					33kv FDR H33 IS OVERLOADED
OVERLOADED 11KV FEEDER AND 15MVA TRANSFORMER AT POWER HOUSE INJECTION SUBSTATION									
MINNA TS	2X60MVA	15MVA TR5	DWER HOUS	10.1	POWER HOUSE 2X15MVA	MAITUNBI	7.0	0.0	15MVA TR5 AT POWER HOUSE IS OVERLOADED
						BOSSO	6.5		
						TOTAL	13.5		
OVERLOADED 15MVA TRANSFORMER AT ZARUMAI INJECTION SUBSTATION									
MINNA TS	2X60MVA	15MVA TR1	ZARUMAI	10.6	ZARUMAI 2X15MVA INJ S/S	GRA	2.5	0.0	15MVA TR1 AT ZARUMAI OVERLOADED
						D/KURA	5.5		
						H/CAMP	4.5		
						TOTAL	12.5		
OVERLOADED 11KV FEEDERS AND 15MVA TRANSFORMER AT BIDA TS									
BIDA TS	1X 30MVA, 1X60MVA	15MVA TR1		10.2	2X15MVA, 132/11KV BIDA TS	TOWN	10.2	0.0	15MVA TR1 AT BIDA IS OVERLOADED, 11kv
						GRA	9.5		
						TOTAL	19.7		
OVERLOADED 33KV UKE-MASAKA FEEDER FROM KEFFI TS									
AT 8	1X30MVA, 1X60MVA	30/60MVA	UKE/MASAKA	23	NIL	NIL	NIL	23.0	33kv UKE/MASAKA IS OVERLOADED
OVERLOADED 15MVA TRANSFORMER FROM K34 INJECTION SUBSTATION									
AT 8	1X30MVA, 1X60MVA	15MVA TR2	KEFFI	12.3	2X15MVA K34 INJ S/S KEFFI	FDR1	4.0	0.0	15MVA TRANSFORMER AT K34
						FDR2	5.2		
						FDR3	4.5		
						TOTAL	13.7		
BURNT EQUIPMENT AT L15 INJECTION SUBSTATION LAFIA									
AT 7	1X30MVA, 1X45MVA	15MVA TR2	LAFIA		2X15MVA L15 INJ S/S LAFIA	1A	3.5	0.0	EQUIPMENT BURNT AND LOAD
						1B	2.6		
						GOVT FDR	2.0		

Table 12: Generation Contract Type

3.5.2 TCN Interface Limitations

KEY TRANSMISSION INTERFACE LIMITATIONS					
TRANSMISSION INTERFACE	INSTALLED CAPACITY	AVAILABLE CAPACITY	LINE/TRANSFORMER/EQUIPMENT	EFFECT	REMARKS
ACC Katampe	330/132kV 2 X 150MVA		Transformer limitation	Loadshedding	Upgrade of transformer to 3X150MVA
Katampe 3	132/33kV 1 X 100MVA		Bay limitation	Inadequate evacuation of power from the station	Creation of additional 3 bays
Kukwaba TS	132/33kV 2 X 60MVA		Transformer limitation	Loadshedding	Upgrade of the transformer to 2X100MVA
Kukwaba TS	132/33kV 2 X 60MVA		Bay limitation	Inadequate evacuation of power from the station	Creation of additional 2 bays
Gwagwalada TS	132/33kV 2 X 60MVA	1 X 60MVA	Transformer limitation	Loadshedding	Upgrade of transformer to 2X100MVA
Kubwa TS	132/33kV 2 X 60MVA	1 X 60MVA	Transformer limitation	Loadshedding	Upgrade of the transformer to 2X100MVA
Karu TS	132/33kV 2 X 60MVA	1 X 60MVA	Transformer limitation	Loadshedding	Upgrade of the transformer to 2X100MVA
Central Area TS	132/33kV 3 X 60MVA	2 X 60MVA	Transformer limitation	Loadshedding	Upgrade of the transformer to 3X60MVA
Suleja TS	132/11kV 1 X 7.5MVA		Transformer limitation	Loadshedding	Upgrade of the transformer 2X7.5MVA
Keffi TS	132/33kV 1 X 30MVA, 1 X 60MVA		Transformer limitation	Loadshedding	Upgrade of the transformer to 2X60MVA
132kV Apo - Karu - Keffi - Akwanga			132kV Apo-Karu-Keffi-Akwanga Line limitation	Loadshedding	Upgrade of the 132kV line

Table 12: Generation Contract Type

3.5.3 Analysis of SAIFI, SAIDI and CAIFI resulting from transmission and distribution limitations

DETAILS	SAIDI	SAIFI	CAIDI
2022	0.00359	0.003834	0.936318

Table 12: Generation Contract Type

4. Capital Expenditure (CAPEX)

4.1 Historical analysis of allowed limits vs actual CAPEX utilisation for the last 5 years (including sources of financing these historical projects)

AEDC surpassed its allowed CAPEX from 2018 – 2021 by 2.75bn, 8% higher than the allowed CAPEX for the period. AEDC only considered 2018 – 2021 as the 2022 Audited Financial Statement is not ready yet. The additional spending on CAPEX is due to AEDC's commitment to improving service delivery to customers and reducing losses, even though the company faced liquidity crises during the period. The table below compares actual CAPEX and allowed CAPEX from 2018 – 2021.

CAPEX ₦'000	2018	2019	2020	2021	Total
Allowed Capex -MYTO	-	9,482,267	9,482,267	15,197,410	34,161,944
Actual Capex - AFS	6,397,292	6,466,661	12,316,511	11,732,728	36,913,192
Variance (Actual - Allowed)	6,397,292	-3,015,606	2,834,244	-3,464,682	2,751,248

Table 13: Comparison of Allowed CAPEX vs Actual CAPEX

4.2 CAPEX Plan

In order to implement this rate adjustment project plan and achieve moderate improvements in the business at a comfortable tariff for its customers, AEDC has estimated a total capex of ₦235.14bn over the five years Horizon. This capital expenditure is expected to provide performance improvements across three areas:

4.2.1 Loss Reduction – *Technical, Commercial, and Collection Losses*

4.2.2 Customer service improvements

4.2.3 Health and safety improvements

These higher CAPEX levels are paramount to AEDC achieving significant reductions to its current loss levels. The CAPEX Plan for the rate adjustment period is summarized below:

	2023 (Jul - Dec)	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Total
Technical CAPEX							
Network Expansion	1,892,500,000	11,355,000,000	9,462,500,000	7,570,000,000	3,785,000,000	3,785,000,000	37,850,000,000
Network Reconfiguration	567,500,000	3,405,000,000	2,837,500,000	2,270,000,000	1,135,000,000	1,135,000,000	11,350,000,000
Network Rehabilitation	820,000,000	4,920,000,000	4,100,000,000	3,280,000,000	1,640,000,000	1,640,000,000	16,400,000,000
Network Upgrade	1,012,500,000	6,075,000,000	5,062,500,000	4,050,000,000	2,025,000,000	2,025,000,000	20,250,000,000
SCADA		2,750,000,000	2,500,000,000	2,500,000,000	2,500,000,000		10,250,000,000
DT Energy meters		3,967,460,000	2,975,595,000	2,975,595,000			9,918,650,000
33kV HV Outdoor VTCT HV meters		313,200,000	234,900,000	234,900,000			783,000,000
11kV metering Panel		458,737,760	344,053,320	344,053,320			1,146,844,400
Accuracy test on site equipment		227,148,000	170,361,000	170,361,000			567,870,000
AMI Infrastructure	678,453,330						678,453,330
Clamp On meters (Multimeters)		27,144,374	20,358,281	20,358,281			67,860,936
AMI Operations		196,116,000	196,116,000	196,116,000	196,116,000	196,116,000	980,580,000
Total Technical CAPEX	4,970,953,330	33,694,806,134	27,903,883,601	23,611,383,601	11,281,116,000	8,781,116,000	110,243,258,666
Commercial CAPEX							
Restructuring of Business Hubs	15,000,000						15,000,000
Data clean-up cost/Enumeration	8,000,000	13,000,000	5,000,000				26,000,000
Buying Sim cards to smart enabled meters	24,700,000						24,700,000
RPU's Tools (Toolbox, Smartphones, Clamp)	18,155,000						18,155,000
Setting efficient dashboard	1,500,000						1,500,000
Replacement of obsolete meters - 226,000	18,203,170,000	9,101,585,000	9,101,585,000				36,406,340,000
Meter ALL Unmetered Customers	16,117,537,770	16,117,537,770	16,117,537,770	16,117,537,770			64,470,151,080
DT Energy meters		9,918,650,000					9,918,650,000
Vehicles - 351	1,897,000,000	3,794,000,000	1,897,000,000				7,588,000,000
Source code for the billing platform		22,500,000					22,500,000
Total Commercial CAPEX	36,285,062,770	38,967,272,770	27,121,122,770	16,117,537,770	-	-	118,490,996,080
Other Investments							
HSSE		929,789,099	1,032,065,900	1,145,593,149	1,271,608,395	1,411,485,319	5,790,541,862
Customer Centric Plan	111,000,000	40,000,000	40,000,000	40,000,000	40,000,000	40,000,000	311,000,000
Miscellaneous	150,000,000	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	300,000,000
Total Other CAPEX	261,000,000	999,789,099	1,102,065,900	1,215,593,149	1,341,608,395	1,481,485,319	6,401,541,862
Grand Total	41,517,016,100	73,661,868,004	56,127,072,271	40,944,514,520	12,622,724,395	10,262,601,319	235,135,796,608

Table 14: Proposed CAPEX Plan for Rate Adjustment (YTD 2023 – 2028)

4.3 Modernization and reinforcement of network:

AEDC has conducted a comprehensive network assessment to identify areas of improvement and will invest in

- I. Advanced technologies such as SCADA systems, distribution automation, and smart meters
- II. Upgrade transformers and feeders
- III. Enhance metering infrastructure through the implementation of advanced metering infrastructure (AMI) and smart meters.

- IV. Promote the integration of renewable energy sources into the distribution network.
- V. Strengthen distribution system planning to optimize network configuration and anticipate future needs.

4.4 Other CAPEX Plan including Spares:

In this proposal, AEDC only considered core network rehabilitation equipment and projects that will accelerate its performance and reduce losses significantly within the next five years.

4.5 Proposed CAPEX Financing Arrangements and Strategies:

AEDC’s projected CAPEX plan of ₦235bn over the next five years is expected to fund the above strategic projects, and based on financial analysis, the business has identified a debt/equity position of 70/30 as the optimal capital structure to fund its capex requirements. The debt is expected to be financed through a blend of development finance and commercial debt. The funding from Development Finance Institutions is expected to come from institutions such as the World Bank’s DISREP and AfDB.

- I. **World Bank Distribution Sector Recovery Program (DISREP):** The World Bank Board has approved \$500 million under DISREP – Program for Results (PforR) to support sector regulatory and contractual framework and financial stability for NESI on June 23, 2020. AEDC has been allocated \$47.43 million which represents 9.4% of the total funding available for DisCos under the Program for Results (PforR) and under Investment Project Financing (IPF) programs with PforR financing of \$35.19 million to part-finance the PIP implementation and IPF of \$12.24 million for financing of bulk procurement of meters.
- II. **African Development Bank:** The AfDB has indicated an interest in providing additional funding along with the World Bank to support AEDC’s CAPEX spending, and we await further details of their participation.

29,061,911,270	51,563,307,603	39,288,950,590	28,661,160,164	8,835,907,077	7,183,820,923
17,437,146,762	30,937,984,562	23,573,370,354	17,196,696,098	5,301,544,246	4,310,292,554
8,718,573,381	15,468,992,281	11,786,685,177	8,598,348,049	2,650,772,123	2,155,146,277
2,906,191,127	5,156,330,760	3,928,895,059	2,866,116,016	883,590,708	718,382,092
41,517,016,100	73,661,868,004	56,127,072,271	40,944,514,520	12,622,724,395	10,262,601,319

Table 25:

Investment Financing Structure

4.6 Capital Adequacy, including Payment Guarantees to NBET and ONEM:

AEDC’s performance has improved since the disbursement of 11.7bn from the CBN NEMSF-2 facility in 2023, and payment to the market has also improved. Hence, 100% settlement of ONEM and NBET invoices is guaranteed from 2024 as the significant impact of the 2023 implemented projects will become visible. Also, AEDC is transitioning to bilateral contracting. Once this is achieved, energy invoices from contracted Gencos will be paid in full due to the strategic deployment of energy to consumers and proper energy accounting.

5. Operating Expense (OPEX)

5.1 OPEX Plans

AEDC has assessed its OPEX requirements for the periods under review and considered the current level of operations, the planned increase in network coverage, business culture changes, and overall organizational strategy. This has enabled the business to estimate realistic OPEX levels to optimize business performance. The OPEX consists primarily of the following expense categories:

- Collection expenses
- Maintenance of network assets and other categories of equipment and office buildings
- Customer-centricity costs
- Staff costs
- Security and insurance
- Transportation costs
- Office rent, repairs, and consumables

AEDC's unique environment and business strategies necessitate our current and estimated future OPEX needs are discussed as follows:

The below table shows our projected OPEX plan for 2023:

AEDC OPEX	Projected 2023 (₹)
Fixed Costs	
External Audit	120,000,000
Professional Services	269,121,286
Board of Directors Expenses	217,807,188
Management Expenses	772,658,825
Consultancy Services Expenses	1,500,000,000
Motor Vehicle Expenses	337,615,442
Repair And Maintenance	2,500,000,000
Electricity Bills - Office Accommodations	150,000,000
Total Fixed Cost	5,867,202,741
Admin costs (fixed)	
Staff Cost	14,478,025,864
Total Admin Cost	14,478,025,864
Variable costs	
Commission on Sales	3,127,385,988
Other Direct Expenses	2,282,025,146
General Expenses	6,442,308,526
O&M Expenses	3,637,044,747
Impairment Loss	25,000,000,000
Total Admin Cost	40,488,764,407
Total Disco Cost	60,833,993,012

Table 16 Proposed OPEX Plan for 2023

5.2 Analysis of Historical OPEX

S/n		2022	2021	2020
1	Staff Cost(Staff, Management and Board Expenses			
	Staff cost	11,240,157,463.44	11,929,153,705.11	12,035,430,376.00
	Management and Board Expenses	761,896,933.19	1,224,106,250.91	1,548,037,092.17
	O&M Fees	2,797,726,728.49	2,638,920,636.44	1,775,183,075.44
		14,799,781,125.12	15,792,180,592.46	15,358,650,543.61
2	Repairs and Maintenance	1,117,262,647.23	433,614,393.24	1,105,807,571.61
3	Billing and Collection Expenses	3,165,189,675.71	1,809,477,155.11	809,792,169.14
4	Office and Admin	14,722,788,715.71	33,436,929,750.63	20,268,230,354.62
	No of Staff	4336	4248	4321

Table 17 Historical OPEX (2020 – 2022)

Staff, Management and Board Expenses comprise personnel gross salaries of all AEDC staff and Management team. It also includes directors' fees and allowances paid during the year. We have also included the Management fees incurred on Operations and Maintenance contract.

Repairs and maintenance comprise costs incurred on maintaining substations, substation equipment and overhead system lines.

Billing and collection expenses relate to costs incurred on billing expenses and marketers' mileages for billing and collection activities.

This comprises costs incurred on computer stationeries, external audit and other professional services and other administrative costs. We have also included impairment losses and finance costs incurred by the company.

TECHNICAL CAPEX - 1

S/N	Project	UoM	Quantity	Unit Cost	Total
NETWORK EXPANSION					
1	Injection Substation proposed	No	14	1,620,000,000	22,680,000,000
2	Relief Substation proposed	No	501	18,000,000	9,018,000,000
3	Line expansion (6KM per Feeder @ N15M per 1KM)	No/RL	48	90,000,000	4,320,000,000
4	Proposed 10KM 11kV Underground Expansion (i. 150mm2 X 3C @ ₦45,000)	Meter	10000	45,000	450,000,000
5	Straight through (150 – 185mm2)	Pkts	100	80,000	8,000,000
6	Raychem termination kits	Pkts	367	60,000	22,020,000
7	11KV Scotch Tapes	Rolls	200	5,000	1,000,000
8	Ferules	Pcs	200	5,000	1,000,000
9	Proposed 30KM LV Expansion U/G (150mm2 X 4C)	Meter	30000	45,000	1,350,000,000
	Total				37,850,020,000
NETWORK CONFIGURATION					
1	Proposed 17KM of 33KV U/G cable reconfiguration (RL - 3X17KM = 51KM, 240mm2 X 1C @ ₦75,000/Mtre)	Meters	51000	75,000.00	3,825,000,000.00
2	Proposed 28KM of 11KV U/G cable reconfiguration (RL - 3X28KM = 84KM, 185mm2 X 1C @ ₦35,000/Mtre)	Meters	84000	35,000.00	2,940,000,000.00
3	Reconfiguration of 11kV O/H line Proposed 6 fdrs per Injection Substation. 15No Injection substation 1KM of 11kV O/H cost ₦9.5M 3.5KM per fdr = ₦33.25M	No	90	33,250,000.00	2,992,500,000.00
4	Switch Gear (RMU) SF6	No	135	9,500,000.00	1,282,500,000.00
5	Straight through	Pkts	150	60,000.00	9,000,000.00
6	Raychem termination kits	Pkts	200	50,000.00	10,000,000.00
7	Tapes	Rolls	1000	5,000.00	5,000,000.00
8	Ferules	Rolls	1000	5,000.00	5,000,000.00
9	Excavation & Backfilling	Meters	45000	5,000.00	225,000,000.00
10	Cable slabs	Meters	2000	28000	56,000,000.00
	Total				11,350,000,000.00
NETWORK UPGRADE					
1	HT Line Reconductoring	Mtr	750000	1,500.00	1,125,000,000.00
2	HT Line Reconductoring	Mtr	1600000	1,300.00	2,080,000,000.00
3	DTs and Power Transformer up-rating (300kVA to 500kVA)	No	250	8,500,000.00	2,125,000,000.00
4	DTs and Power Transformer up-rating (2.5MVA to 7.5MVA)	No	25	120,000,000.00	3,000,000,000.00
5	LV Cable Upgrade	Mtr	18000	60,000.00	1,080,000,000.00
6	15MVA Power Transformer	No	12	200,000,000.00	2,400,000,000.00
	Total				11,810,000,000.00

TECHNICAL CAPEX - 2

S/N	Project	UoM	Quantity	Unit Cost	Total
NETWORK REHABILITATION					
1	NETWORK SECURITY/ PROTECTION (SLABS)	No	300	500,000	150,000,000
2	TRANSFORMER OIL	Drums	2600	450,000	1,170,000,000
3	SUBSTATION FENCING	Pcs	3000	650,000	1,950,000,000
4	PURCHASE OF OUTDOOR 33KV CB	No	12	10,000,000	120,000,000
5	PURCHASE OF INDOOR 33KV CB	Set	4	500,000,000	2,000,000,000
6	REHABILITATION OF 11KV CIRCUIT BREAKER	Set	9	150,000,000	1,350,000,000
7	REHABILITATION OF INDOOR 33KV CB	Set	5	500,000,000	2,500,000,000
8	CLAMP METER	No	207	484,000	100,188,000
9	CONTROL CABLES	Lots	1	500,000,000	500,000,000
10	AVOMETER	No	207	483,000	99,981,000
11	80KV PRESSURE TESTER	No	6	13,000,000	78,000,000
12	INSULATION RESISTANCE TESTER	No	40	6,000,000	240,000,000
13	EARTH RESISTANCE TESTER	No	20	5,000,000	100,000,000
14	PRIMARY /SECONDARY CURRENT INJECTION TEST SET	No	6	19,000,000	114,000,000
15	OIL DIELECTRIC TESTER	No	7	15,000,000	105,000,000
16	TRIPPING UNITS AND BATTERIES BANK	No	85	6,000,000	510,000,000
17	TRANSFORMER AND LINE CONTROL PANELS	No	35	10,000,000	350,000,000
18	RADIO AND MAST	No	80	15,000,000	1,200,000,000
19	CABLE FAULT LOCATOR	No	6	70,000,000	420,000,000
20	AUTO RECLOSERS	No	15	20,000,000	300,000,000
21	33KV FIBRE X-ARM	No	3629	20,280	73,596,120
22	33kv POT INSULATOR WITH SPINDLE	Set	2258	10,205	23,042,890
23	3kv CHANNEL IRON	No	320	10,885	3,483,200
24	33kv ANGULAR TIE STRAP	Set	779	1,300	1,012,700
25	HT CONCRETE POLE	No	2000	92,274	184,548,000
26	150mm2 SR ALL. COND.	Meter	202443	1,216	246,170,688
27	800A 4-WAY F/PILLAR	No	50	520,000	26,000,000
28	OPERATION VAN	No	4	11,050,000	44,200,000
29	DISC INSULATOR	No	1000	2,535	2,535,000
30	11kv 150mm2 X 1C XLPE CABLE	Meter	690	8,840	6,099,600
31	11kv 150mm2 X 3C XLPE CABLE	Meter	4980	28,600	142,428,000
32	150mm2 X 4C CABLE	Meter	1402	29,900	41,919,800
33	70mm2 X 4C LT CABLE	Meter	90	20,800	1,872,000
34	11KV FIBRE X-ARM	No	725	13,000	9,425,000
35	11kv TIE STRAP	No	94	975	91,650
36	11kv STAY COMPLETE	Set	15	9,500	142,500
37	11kv PIN INSULATOR WITH SPINDLE	Set	279	4,654	1,298,466
38	FAST MOVING MATERIALS FOR STANDBY	Lots	1	26,281,760	26,281,760
39	VEGETATION CONTROL(PER QUARTER)	Lots	20	21,450,000	429,000,000
40	11kv CHANNEL IRON	No	72	10,335	744,120
41	33kv I/SPINDLE	No	196	2,600	509,600
42	11kv 35mm2 x 1C XLPE CABLE	Meter	360	3,510	1,263,600
43	500kVA, 11/0.400kV TRANSFORMER	No	22	6,422,000	141,284,000
44	33kv 185mm2 X 1C XLPE CABLE	Meter	1945	15,600	30,342,000
45	33kv STAY COMPLETE	Meter	6	9,500	57,000
46	33kv GANG ISOLATOR	Set	30	260,000	7,800,000
47	33kv LIGHTENING ARRESTER	Set	1594	78,000	124,332,000
48	33kv D-FITTINGS	Set	209	84,500	17,660,500
49	11kv SF6 RMU	Set	40	3,380,000	135,200,000
50	11kv LIGHTNING ARRESTER	Set	3	39,000	117,000
51	95mm2 X 4C LT CABLE	Meter	30	20,800	624,000
52	CHAIN POWER SAW	No	4	104,000	416,000
53	11kv SF6 RMU	Set	80	3,350,000	268,000,000
54	70mm2 X 3C XLPE CABLE	Set	50	15,600	780,000
55	33kv RELIEF SUBSTATION	Set	1	29,237,301	29,237,301
56	800A, 4-WAY F/PILLAR	Set	254	520,000	132,080,000
57	11kv 185mm2 X 3C CABLE	Meter	11	31,980	351,780
58	33kv 185mm2 X 1C HT CABLE	Meter	1200	15,600	18,720,000
59	11kv 150mm2 X 3C HT CABLE	Meter	440	28,600	12,584,000
60	11kv 70mm2 X 3C CABLE	Meter	30	15,600	468,000
61	500mm2 X 1C CABLE	Meter	510	15,600	7,956,000
62	300mm2 X 1C CABLE	Meter	190	11,700	2,223,000
63	70mm2 EARTH COPPER WIRE	Meter	600	2,500	1,500,000
64	33kv 150mm2 X 1C CABLE (mm2)	Meter	15	13,000	195,000
65	6-BOLT CLAMP	No	36	5,600	201,600
66	LT CONCRETE POLE	No	1200	80,000	96,000,000
67	CONSTRUCTION OF WORKSHOP	Lots	1	400,000,000	400,000,000
68	OFFICE FURNITURE	No	7	2,000,000	14,000,000
69	WEILDIND MACHINE	No	1	2,000,000	2,000,000
70	HV WINDING MACHINE	No	1	55,000,000	55,000,000
71	HAND TROLLEY	No	1	2,000,000	2,000,000
72	HEAVY LIFT JACK	No	1	550,000	550,000
73	ELECTRIC OVEN	No	1	5,000,000	5,000,000
74	COIL CUTTING MACHINE	No	2	500,000	1,000,000
75	FORKLIFT	No	1	15,000,000	15,000,000
76	AIR COMPRESSOR	No	1	1,000,000	1,000,000
77	LV WINDING MACHINE	No	1	55,000,000	55,000,000
78	ELECTRIC DRIER	No	2	2,000,000	4,000,000
79	SILICAL GEL	Drums	120	310,000	37,200,000
80	VARNIER CALIPER	No	2	50,000	100,000
81	GUAGE METER	No	4	50,000	200,000
82	FILTRATION MACHINE	No	2	60,000,000	120,000,000
83	CHAIN BLOCK	No	2	250,000	500,000
84	SPRAYING MACHINE	No	1	2,000,000	2,000,000
85	LATHE MACHINE	No	1	30,000,000	30,000,000
86	DRILLING MACHINE	No	2	250,000	500,000
87	INDUSTRIAL TOOLBOX	No	2	2,000,000	4,000,000
Total					16,400,012,875

TECHNICAL CAPEX – 3

S/N	Project	UoM	Quantity	Unit Cost	Total
SCADA					
1	Scada	lot	1	10,250,000.00	10,250,000.00
	Total				10,250,000.00
AMI OPERATION					
	1 Bucket Subscription		lot	200,500,000.00	200,500,000.00
	2 APN Subscription		lot	199,600,000.00	199,600,000.00
	3 Data Subscription		lot	195,000,200.00	195,000,200.00
	3 High gain antenna		lot	180,400,000.00	180,400,000.00
	3 Sim Cards		lot	150,780,000.00	150,780,000.00
	3 Communication Modem		lot	54,299,800.00	54,299,800.00
	Total				980,580,000.00
AMI INFRASTRUCTURE					
	1 Communication server		lot	41,296,830.00	41,296,830.00
	2 Database server		lot	42,950,000.00	42,950,000.00
	3 Application server		lot	41,500,000.00	41,500,000.00
	4 Web server		lot	38,900,000.00	38,900,000.00
	5 Work stations		lot	34,037,000.00	34,037,000.00
	6 Switches		lot	58,050,000.00	58,050,000.00
	7 AMI software		lot	342,700,000.00	342,700,000.00
	8 Setup and commissioning		lot	41,960,000.00	41,960,000.00
	9 Recovery server		lot	37,059,500.00	37,059,500.00
	Total				678,453,330.00
CLAMP ON					
	1 Clamp on Multimeters	Nos	156	435,006.00	67,860,936.00
	Total				67,860,936.00
ACCURACY TEST EQUIPMENT					
	Accuracy Test on site Equipment, CI.0.02, complete with printer and online transmission of result.	Nos	46	12,345,000.00	567,870,000.00
	Total				567,870,000.00

TECHNICAL CAPEX – 4

S/N	Project	UoM	Quantity	Unit Cost	Total
DT ENERGY METERS					
1	800/5A Programable Smart electronic energy meter, with communication modem, Class 0.5, complete with Box, wired TTB, 3 Nos Current Transformers(resin Cast/tape wound, Cl. 0.5, 7.5VA,) 24 metres of 500mmsq single core cable, 8 nos cable lugs, plinth, installation, Transportation to site and AMI aquisition	Nos	2,733.00	868,000.00	2,372,244,000.00
2	500/5A Programable Smart electronic energy meter, with communication modem, Class 0.5, complete with Box, wired TTB, 3 Nos Current Transformers(resin Cast/tape wound, Cl. 0.5, 7.5VA,) 24 metres of 300mmsq single core cable, 8 nos cable lugs, plinth, installation, Transportation to site and AMI aquisition	Nos	2,430.00	843,010	2,048,514,300.00
3	300/5A Programable Smart electronic energy meter, with communication modem, Class 0.5, complete with Box, wired TTB, 3 Nos Current Transformers(resin Cast/tape wound, Cl. 0.5, 7.5VA,) 24 metres of 250mmsq single core cable, 8 nos cable lugs, plinth, installation, Transportation to site and AMI aquisition	Nos	3708	830,200.02	3,078,381,674.16
4	200/5A Programable Smart electronic energy meter, with communication modem, Class 0.5, complete with Box, wired TTB, 3 Nos Current Transformers(resin Cast/tape wound, Cl. 0.5, 7.5VA,) 24 metres of 150mmsq single core cable, 8 nos cable lugs, plinth, installation, Transportation to site and AMI aquisition	Nos	1634	761,433.61	1,244,182,518.74
5	100/5A Programable Smart electronic energy meter, with communication modem, Class 0.5, complete with Box, wired TTB, 3 Nos Current Transformers(resin Cast/tape wound, Cl. 0.5, 7.5VA,) 24 metres of 50mmsq single core cable, 8 nos cable lugs, plinth, installation, Transportation to site and AMI aquisition	Nos	1674	702,107.23	1,175,327,503.02
Total					9,918,649,995.92

TECHNICAL CAPEX – 5

S/N	Project	UoM	Quantity	Unit Cost	Total
OUTDOOR VC CT					
1	25/1A, 33kV Composite outdoor CT/VT oil immersed, Cl. 0.5, 10VA, complete with seating Base, hardware Bolt and Nuts, 4, 9Ft UChannel Irons, 25metres, 50mmsq copper wire, installation, including earthing	Nos	20.00	7,131,821.00	142,636,420.00
2	50/1A, 33kV Composite outdoor CT/VT oil immersed, Cl. 0.5, 10VA, complete with seating Base, hardware Bolt and Nuts, 4, 9Ft UChannel Irons, 25metres, 50mmsq copper wire, installation, including earthing	Nos	30.00	7,131,821	213,954,630.00
	100/1A, 33kV Composite outdoor CT/VT oil immersed, Cl. 0.5, 10VA, complete with seating Base, hardware Bolt and Nuts, 4, 9Ft UChannel Irons, 25metres, 50mmsq copper wire, installation, including earthing		10	7,131,821.00	71,318,210.00
	200/1A, 33kV Composite outdoor CT/VT oil immersed, Cl. 0.5, 10VA, complete with seating Base, hardware Bolt and Nuts, 4, 9Ft UChannel Irons, 25metres, 50mmsq copper wire, installation, including earthing		10	7,131,821.00	71,318,210.00
	400/1A, 33kV Composite outdoor CT/VT oil immersed, Cl. 0.5, 10VA, complete with seating Base, hardware Bolt and Nuts, 4, 9Ft UChannel Irons, 25metres, 50mmsq copper wire, installation, including earthing		30	7,131,821.00	213,954,630.00
	Fully Programmable HV Smart Energy meter Cl 0.5,		100	468,880.00	46,888,000.00
	Fibre meter box wire with TTB		100	174,000.00	17,400,000.00
	TTB		100	55,299.00	5,529,900.00
	Total				783,000,000.00

TECHNICAL CAPEX – 6

S/N	Project	UoM	Quantity	Unit Cost	Total
11KV METERING PANEL					
1	50/5A, 11kV metering panels, complete with CT, VT,HV Smart Energy meter. 75 meters,50mmsq 11kV XLPE single core cable, 4 pairs rechem kits, 16 nos cable lugs, 25metre,50mmsq copper wire. 6 Nos Galvanised Earth rod, plinth erection and installation, commissioning	Nos	120.00	5,734,222.00	688,106,640.00
2	100/5A, 11kV metering panels, complete with CT, VT,HV Smart Energy meter. 75 meters,50mmsq 11kV XLPE single core cable, 4 pairs rechem kits, 16 nos cable lugs, 25metre,50mmsq copper wire. 6 Nos Galvanised Earth rod, plinth erection and installation, commissioning	Nos	30.00	5,734,222	172,026,660.00
3	200/5A, 11kV metering panels, complete with CT, VT,HV Smart Energy meter. 75 meters,50mmsq 11kV XLPE single core cable, 4 pairs rechem kits, 16 nos cable lugs, 25metre,50mmsq copper wire. 6 Nos Galvanised Earth rod, plinth erection and installation, commissioning		20.00	5,734,222	114,684,440.00
4	300/5A, 11kV metering panels, complete with CT, VT,HV Smart Energy meter. 75 meters,50mmsq 11kV XLPE single core cable, 4 pairs rechem kits, 16 nos cable lugs, 25metre,50mmsq copper wire. 6 Nos Galvanised Earth rod, plinth erection and installation, commissioning		10.00	5,734,222	57,342,220.00
5	400/5A, 11kV metering panels, complete with CT, VT,HV Smart Energy meter. 75 meters,50mmsq 11kV XLPE single core cable, 4 pairs rechem kits, 16 nos cable lugs, 25metre,50mmsq copper wire. 6 Nos Galvanised Earth rod, plinth erection and installation, commissioning		20.00	5,734,222	114,684,440.00
	Total				1,146,844,400.00