



ORDER/NERC/272/2021

BEFORE THE NIGERIAN ELECTRICITY REGULATORY COMMISSION
IN THE MATTER OF THE EXTRAORDINARY REVIEW OF MULTI-YEAR TARIFF ORDER FOR
ENUGU ELECTRICITY DISTRIBUTION PLC

1.1. Title

This regulatory instrument may be cited as NERC Order on Performance Improvement Plan ("PIP") and Extraordinary Tariff Review Application for Enugu Electricity Distribution Plc ("EEDC").

1.2. Commencement

The approved PIP and Capital Expenditure ("CAPEX") programme of EEDC shall take effect from 1st July 2021 and shall remain effective until 30th June 2026 unless amended by the Commission.

1.3. Context

EEDC applied to the Commission in November 2019 for a review of the provisions for CAPEX in its Multi-Year Tariff Order ("MYTO") tariffs to support the implementation of its Performance Improvement Plan ("PIP") over the next 5 years. Under the Power Sector Recovery Program (PSRP), it is envisaged that the Commission would implement a robust tariff review process aiming at improving the performance of the Nigerian Electricity Supply Industry ("NESI"). This process involved a review of the capital expenditure allowances in the MYTO model to align with the Performance Improvement Plans (PIPs) of the Distribution Companies (DisCos). The approved PIP and Extraordinary Tariff Application shall form the basis for EEDC to prioritise the implementation of the proposed CAPEX initiatives. The approved PIPs shall also form the basis for defining KPIs for EEDC for the next 5 years by the Commission with emphasis on improvement in energy throughput and improved service delivery to the customers.

As part of the Stakeholder Consultation Process for Extra Ordinary Tariff Review, the Commission held public hearings to consider the application filed by EEDC in February 2020 and monitored the stakeholders' engagements by EEDC at different locations within its franchise. Based on the feedback received during the consultations and subsequent

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deliberations with various stakeholders, the Commission approved the Service-Based Tariff (SBT) effective from the 1st of September 2020 to ensure that rates paid by customers align with the quality of service as measured by the daily average availability of power supply over a 60-day reference period. Further updates to EEDC's initial PIP submission have been considered as part of this review to align the PIPs with customer expectations of service commitment by EEDC.

1.4. Summary and Overview of EEDC's Network/Current State

Enugu Electricity Distribution Plc (EEDC) is one of the 11 successor distribution companies of the unbundled Power Holding Company of Nigeria Plc (PHCN). EEDC is responsible for distribution and retail services in Enugu, Abia, Anambra, Ebonyi, and Imo States of Nigeria.

The distribution network operates at three voltage levels and serves major residential, commercial, and industrial hubs covering 18 business units within its network. EEDC is supplied from 15 TCN transmission stations with a combined nameplate capacity of 1,408MVA and the total operational capacity allowed on the transformers, is 1,013MW. With the 2019 peak demand of 1,053MW, the current TCN operational capacity is inadequate to supply EEDC power and the disaggregate values of peak demand downstream in the TCN stations reveal this operational capacity is insufficient. Across the substations, Awada (Onitsha) substation has the current highest peak demand of 216MW and is expected to increase to 254MW by 2024, however, the Awada TCN station has a nameplate capacity of 175MVA and is operationally limited to 126MW. The operational limit of 126MW at the Ojere TCN station causes downstream supply constraints as 90MW of current peak demand cannot be served.

There are 73 33kV feeders, 206 11kV feeders, and 16,485 distribution transformers. The 33/11 kV feeders spanning 10,252km and there are 151 service centers to ensure proximity to customers and improve customer access and satisfaction. EEDC serves 1,036,655 customers with a staff strength of 5,087 serving these customers at different levels. It is expected that these staff numbers would increase. Increase the number of new customer connections from the current average level of 58,000 per year to 70,000 per year.

The customer population is projected to increase by 820,125 customers to 1,820,280 customers by 2024, representing an increase of 84% over the forecast period. This translates to an unsuppressed energy consumption increase of 15% from 6.2 TWh in 2018 to 7.2 TWh in 2024. Drawing these analyses together gives a peak load projection for Total Demand (Unsuppressed Demand Plus Unconnected Demand) in the EEDC franchise

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zone. Load for Total Demand is expected to grow from 1,052 MW to 1,201 MW by 2024 representing a growth of 60%.

The investment plan proposed by EEDC is targeted to:

- i. upgrade existing network capacity,
- ii. invest in technological enhancements to reduce outages and system failures,
- iii. acquire tools to analyse network performance and network assets.

1.5. Stakeholder Consultation

EEDC had followed a process for stakeholder consultation as directed by the Commission. Several focused group discussions to harness stakeholder's views on the service delivery, future expectations, and preferences were conducted with participants. These engagements were required to:

- instill accountability between EEDC and its customers on the services and justification for associated costs and resulting tariffs;
- assist in minimising disputes by engendering understanding and trust between EEDC and its customers;
- provide an opportunity for EEDC to engage with customers on the service improvement initiatives proposed in the PIP.

Key discussion areas for the stakeholder sessions were:

- Quality and reliability of supply
- Quality of the metering, billing, and payment process
- Consumers perception of the processes
- Consumers relationship management
- Quality of fault complaint and repairs process

1.6. Outputs proposed with interventions:

EEDC proposes to undertake numerous interventions to improve service delivery to the customers. Over the next five years, the proposed interventions will allow EEDC to achieve the following:

- Facilitate access to the network for customers
- Obtain 99% metering coverage for all customers
- Improve Energy Availability
- Reduce ATC&C losses according to the performance agreement
- Reduce operating costs by leveraging technology
- Improve customer experience
- Improve Customer Communication and engagement
- Implement a Corporate Social Responsibility program
- Empower employees with quality training and competitive remuneration

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Specifically, the major outputs proposed by EEDC can be summarized as follows:

- Reduce ATC&C losses to 29.2% in 2022
- Reduce customer interruptions from 0.5 to 0.4 per day
- Achieve 100% metering of all customers by 2024
- Reduce the number of deaths and accidents to zero

Table – 1: Planned Service Improvements

Item	Unit	Current	Service Improvement	Year-5 Target	Variance
Customers	#	1,131,843	670,437	1,802,280	59%
Current ATC&C Loss	%	51	22	29.2	43%
Energy Delivered	GWh	2,269	3,456	5,725.2	152%
Average Duration of Supply	(Hrs/Day)	11	2	13	18%
Average Frequency of Interruptions	#/day	0.5	-0.040	0.4	-8%
Average Duration of Interruptions	Hrs/day	6.0	-0.36	5.6	-6%

1.7. Investment Strategies:

Key strategies proposed by EEDC to attain the targeted service levels over the next 5 years include the following:

1. Implementation of investments and other initiatives in distribution network rehabilitation and upgrade aimed at resolving existing constraints limiting availability and quality of energy supply.
2. Identification of eventual constraints to meeting electricity demand arising from issues affecting high and medium voltage network infrastructure.
3. TCN-DisCo interface projects are required in resolving existing constraints and meeting electricity demand.
4. Installation of metering systems to capture all electrical parameters involved in commercial transactions with NBET and TCN and amounts of energy injected into the network operated by the DisCo.
5. Incorporation of an Incidents Recording and Management System (IRMS) to identify the location and analyze the extent of an interruption in electricity supply and to enable fast resolution and service restoration.
6. Regularization of consumers not registered as customers.
7. Installation of appropriate meters for all the ministries, departments, and agencies at federal, state, and local levels.
8. Incorporation of a Commercial Management System (CMS) to manage all commercial processes: revenue cycle, attending to customers, etc.

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9. Incorporation of an Enterprise Resource Planning (ERP) information system to support corporate planning and management of shared services (accounting, finance, human resources, procurement, logistics & information technology).
10. Implementation of a Revenue Protection Project (RPP) supported by Advanced Metering Infrastructure (AMI) to systematically record and monitor consumption of large and medium customers.
11. Incorporation of a Supervisory Control and Data Acquisition System (SCADA) to operate and control HV & MV infrastructure.

Table – 2: Proposed Investment (Technical)

Item	Unit	Current	Additions/ Construction	Year-5 Target	Variance	PIP Rehabili- tation	% of Rehabili- tation
Network Length 33 kV	km	7,179	1,362	8,542	19%	2,753	38%
Network Length 11 kV	km	3,553	902	4,455	25%	565	16%
Network Length 0.4 kV	km	16,162	1,262	17,424	8%		
MVA distributions transformes	MVA	4,877	1,213	6,090	25%		
# distributions transformes	#	16,482	6,810	23,292	41%		
MVA Substations transformes	MVA	1,208	728	1,935	60%		
# Substations transformes	#	125	55	180	44%		

Table – 3: Enugu Disco Proposed Investment Programme (Financial)

Network Investment Type	2021	2022	2023	2024	2025	Total
	N000,000	N000,000	N000,000	N000,000	N000,000	N000,000
Reliability, Distribution Automation	870	720	1,348	1,222	808	4,968
Planning and Construction (P&C)	8,203	8,728	10,627	11,455	11,360	50,373
Loss Reduction	122	257	755	185	332	1,651
Protection, Control & Metering (PC&M)	197	288	433	352	140	1,410
Energy Efficiency	362	363	408	405	542	2,080
GIS Mapping Projects	1,020	428	415	-	-	1,863
HSE Projects	212	237	315	368	362	1,494
Fleet, Security, Facility and Tools	220	92	170	13	97	592
IT projects	507	595	348	383	400	2,233
Total	11,712	11,712	14,638	14,638	14,638	67,338

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2.0 Commission's Review

2.1. The Commission's Guideline for PIP Application established the criteria for EEDC to prepare an output-based plan that sets out the service improvement output targets over the planning horizon of 5 years. This plan includes the programs and activities that will lead to the realisation of those outputs, the human and material resources required, the projected costs and analysis of the risk factors, and the proposed mitigation measures. EEDC's PIP and Extraordinary tariff review application was exposed to a Public Hearing and consultation presided over by a panel of three commissioners in line with the Business Rules of the Commission and the "Regulations on Procedure for Electricity Tariff Reviews in the Nigerian Electricity Supply Industry" in February 2020. The Hearing provided an avenue for customers, interested parties, and expert intervenors to critically examine EEDC's proposal and the associated expected improvement in service levels. EEDC was further directed to conduct stakeholders' (customers') engagements at various locations within its franchise area which were attended and monitored by the staff of the Commission.

2.2. Following the outcome of the public consultation, the Commission had vide Order NERC/198/2020 required EEDC to update its PIP and Extraordinary Tariff Review Application by disaggregating its respective service areas and/or customers per quality of service in order to align rates payable by customers with the quality of supply ("service-based tariffs"). A further review of EEDC's updated submission was considered using the following criteria:

- i. completeness and consistency of the description of each component of the PIP;
- ii. compliance of each component with the Guidelines for preparation of PIPs issued by the Commission;
- iii. analysis of expected results/outcomes from the implementation of each component including the mitigants provided for addressing identified challenges that may hinder the achievement of target;
- iv. thorough price benchmarking and other relevant approaches to the estimation of resources (physical amounts and related OpEx and CapEx) for each component;
- v. determining if the cost and timeline for delivering the output is efficient;
- vi. assessing the efficiency of the proposed financing arrangement;
- vii. analysing the level of technology/modernization leap proposed going forward;
- viii. determining and analysing the overall level of efficiency improvement proposed.

3.0 Results of the Review

The Commission, having considered EEDC's PIP and Extraordinary Tariff Review Application in line with the provision of EPSRA and relevant regulations, approved the PIP and CAPEX programme over 5 years as provided in Table – 4 and Table – 5 below.

Summary of approved projects for Year-1 and Year-2 are also provided in Table – 6, while a detailed list of approved projects for Year-1 and Year-2 are provided in Appendices 1 and 2 respectively.

Table – 4: EEDC’s Approved 5-year CAPEX Programme

Year	2021	2022	2023	2024	2025	Total
	Period - 1	Period - 2	Period - 3	Period - 4	Period - 5	Period - 1 – 5
	N000,000	N000,000	N000,000	N000,000	N000,000	N000,000
Annual Approved CAPEX	13,486.5	13,486.5	13,486.5	13,486.5	13,486.5	67,432.3

Table – 5: EEDC’s Approved 5-year PIP and CAPEX Programme

5-Year Approved PIP	
	N000,000
Total CAPEX	67,432.3
Distribution Network Capex	50,067.7
Construction of 33kV Feeder	10,068.5
Rehabilitation of 33kV Feeder	13,711.7
Construction of 11kV Feeder	4,040.6
Rehabilitation of 11kV Feeder	1,324.8
Construction of 0.400kV Feeder	2,185.9
Distributions transformers (plan)	10,257.4
MVA Substations transformers (plan)	8,478.7
ATC&C Loss Reduction Plan (total)	6,340.0
Customer Service Improvement Plan	1,457.3
IT Investments (SCADA+GIS+ERP+HSE)	7,709.7
SCADA Initiatives	2,318.4
GIS Improvement	1,921.0
ERP System Infrastructure	-
HSE Initiatives	1,523.5
AMI Network Metering	1,946.9
Customer Metering Capex	-
Network Metering Capex	1,261.4
Others	596.2

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Table – 6: EEDC's Approved PIP and CAPEX Programme for 2021 and 2022

Approved PIP	2021	2022
	<i>N000,000</i>	<i>N000,000</i>
Total CAPEX	<u>13,486.5</u>	<u>13,486.5</u>
Distribution Network Capex	8,963.0	7,686.2
Construction of 33kV Feeder	1,382.1	2,723.5
Rehabilitation of 33kV Feeder	281.7	2,644.5
Construction of 11kV Feeder	294.3	783.0
Rehabilitation of 11kV Feeder	442.1	21.9
Construction of 0.400kV Feeder	382.7	736.8
Distributions transformers (plan)	926.4	114.8
MVA Substations transformers (plan)	5,253.6	661.7
ATC&C Loss Reduction Plan (total)	539.8	5,800.3
Customer Service Improvement Plan	713.0	-
IT Investments (SCADA+GIS+ERP+HSE)	1,946.9	-
SCADA Initiatives	0.0	0.0
GIS Improvement	0.0	0.0
ERP System Infrastructure	0.0	0.0
HSE Initiatives	0.0	0.0
AMI Network Metering	1946.9	0.0
Customer Metering Capex	-	-
Network Metering Capex	1,261.4	-
Others	62.4	-

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4.0 Annual Update of PIPs

EEDC shall be required to provide an annual update to the PIP to reflect the proposed investment programme as part of the Minor Review of Tariffs on a continuous basis. The Commission recognizes this PIP as a dynamic roadmap of where EEDC envisions to be in the next five (5) years and will continue to evolve in alignment with market development and changes to the operating environment. EEDC may invest more than the indicated annual CAPEX figure in any particular year on account of front-loading proposed future investments or due to the unanticipated critical investment needs subject to the approval of the Commission.

5.0 Front-loading of CAPEX

EEDC is at liberty to frontload its CAPEX programmes to attain accelerated service improvements. Frontloading of CAPEX programme in any year shall not exceed annual CAPEX for the following year in line with the framework for continuous update of the PIPs.

6.0 CAPEX Clawback

Annual CAPEX provisions that are unutilized or imprudently expended shall be clawed back during Minor Reviews of Tariffs in line with the requirements of Section 7(a) of Regulations on Procedure for Electricity Tariff Reviews in the NESI.

7.0 Commencement and Effectiveness

The approved PIP and CAPEX programme of EEDC shall take effect on the 1st day of July 2021 and shall remain effective until the 30th day of June 2026.

8.0 Signature

Dated this 29th day of April 2021



Sanusi Garba
Chairman



Dale C. Akpeneye
Commissioner


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Appendices

Appendix 1 - Details of Planned 2021 Investments for Enugu Electricity Distribution Company

Distribution Network: lines							
Project Type: Construction of 33kV Feeder							
#	Project Description	Location	Overhead/ underground	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW)	
1	Construction of 10.8km Dual 33kv feeders from on-going Ihiala TCN Station to Awo-Idemili and Orlu Injection substations	Nnewi district	Overhead	10.8	Jul-21	3	
2	Construction of 4.85km Dual 33kv feeders from on-going Ihiala TCN Substation to Ihiala Injection substation & tie in to existing Mgbidi/Obasi 33kv lines, Nnewi	Nnewi district	Overhead	4.85	Jul-21	3	
3	Creation of 4nos 33kv feeders of 4.75km for Power evacuation from on-going Nnewi 2 x 60MVA 132/33KV TCN Station	Nnewi district	Overhead	4.75	Jul-21	3.75	

4	Dualization of 11km Agulu 33kv feeder for Power Evacuation from Nibo ICN Station	Ekwulobia district	Overhead	11	Nov-21	2.2
5	Proposed 3.9km 33kv feeder from Ohiya TCN to Umuahia Tower, Umuahia DISTRICT	Umuahia, Umuahia district	Overhead	3.9	Aug-21	3
6	Proposed 36.02KM Line from Umuahia Tower to Okigwe Junction ,Umuahia District	Umuahia- Okigwe, Orlu district	-do-	36.02	Aug-21	3
7	Proposed 3km, 33kv incomer line to proposed Esut injection substation	Agbani, Awkunanaw district	-do-	3	Oct-21	2
8	Proposed 7km 33KV double circuit line to proposed Elim in j ss (Elim 33kv and Ugwuogo 33KV), Abakpa district	Enugu	-do-	7	Sep-21	2.1
9	Construction 4.86km dual circuit 33kv overhead line for the creation of Army Barracks 2 33kv feeder	Ezeiweka, Ogidi district	-do-	4.86	Sep-21	4

10	Construction of 10.64km 33kv overhead line with 40ft pole from Mummy Market to Amagu Junction, Abakaliki District	Abakaliki, Abakiliki district	-do-	10.64	Jun-21	1.8
11	Construction of 4.2km 33kv line from Enyigba Village to Nwaku Ndufu Alike Ikwa, Abakaliki District	Ikwa, Abakaliki district	-do-	4.2	Jun-21	1
12	Proposed 1.8km line transfer of Transtel from Ajali 33kv to Coca Cola 33kv	Ninth Mile, Abakpa district	-do-	1.8	Apr-21	0.65
13	1 km Extension of Emene Industrial 33kv feeder to Airport	Emene, Abakpa district	-do-	1	Jun-21	1.5
14	Construction of 9.5km 33kv line to New Owerri Injection SS (Dualization of Z05 to New Owerri Inj. SS) - CBN Leg.	New Owerri, New Owerri district	-do-	9.5	Jun-21	2.7
15	2.05km Bifurcation and Dualization of Obosi 33kv feeder	Nnewi, Nnewi district	-do-	2.05	Apr-21	0.2
16	1km Feeder bifurcation of Nnewi Industrial for supply improvement to MD Customers	Nnewi, Nnewi district	-do-	1	Apr-21	0.4

17	Proposed installation of an Auto recloser on existing Afikpo 33kv feeder, Abakaliki District	Afikpo, Abakaliki district	-do-	0	Apr-21	0
18	Construction of 12.2km dedicated 33kv line from JDP to Ihite Uboma and installation of 33kv breaker for turn-in, turn-out, Mbaise district	Ihite Uboma, Mbaise district	-do-	12.2	Aug-21	1.55
19	Construction 16.8km Neni 2 33kv feeder	Neni	Overhead	16.8	Nov-21	2.2
20	Construction of 12.55km Agulu 2 33kv feeder	Agulu	-do-	12.55	Nov-21	2.2
21	Back feeding of Mbaise segment of Airport 33kv feeder from Mibutu 33kv feeder	Mbaise	-do-	-	May-21	0.85

Distribution Network: lines

Project Type: Rehabilitation of 33kV Feeder

#	Project Description	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	Line A				
2	Rehabilitation of Nigha 33kv feeder, Umuahia district	Umuahia district	2.90	Jun-21	0

3	Rehabilitation of Nemi, Agulu & Orumba 33kv feeders, Ekwulobia district	Ekwulobia district	5.18	Jun-21	0
4	Rehabilitation of Nnewi, Nnewi Industrial and Obasi 33kv feeders, Nnewi district	Nnewi district	8.69	Jun-21	0
5	Rehabilitation of Atani 33kv and sections of Proposed Fegge 33kv feeder, Ogbaru district	Ogbaru district	0.69	Jun-21	0
6	Rehabilitation of Niccus, Aguleri, Umunya and Idemili 33kv feeders, Ogidi district	Ogidi district	11.32	Jun-21	0
7	Rehabilitation of 3-3 & Abata Nsugbe 33kv feeders, Onitsha district	Onitsha district	0.69	Jun-21	0
8	Rehabilitation of Yahe and Itigidi 33kv feeders, Abakaliki district	Abakaliki district	14.07	Jun-21	0
9	Rehabilitation of Ibagwa, Orba and Ehamufu 33kv feeders, Nsukka district	Nsukka district	7.23	Jun-21	0
10	Rehabilitation of Okigwe 33kv feeder - Mbaise leg & 5km Mbaise 33kv feeder Owuru, Mbaise district	Mbaise district	9.56	Jun-21	0
11	Rehabilitation of New Owerri 33kv feeder - CBN leg, New Owerri district	New Owerri district	0.91	Jun-21	0
12	Rehabilitation of Orlu 33kv feeder - Orlu leg, Orlu district	Orlu district	1.67	Jun-21	0
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Distribution Network: lines

Project Type: Construction of 11KV Feeder

#	Project Description	Conductor Size (mm ²)	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	Proposed 3no, 3km 11KV Feeder from proposed Esut 1 x 15MVA	150 mm ²	Agbani	9	Oct-21	2.5
2	Proposed 3No, 7km 11KV Feeder from proposed Elim Inj as (Ugwuogo 11KV, Ncc 11KV and Estate 11KV), Abakpa district	150 mm ²	Enugu	7		2.1

3	Proposed construction of 1km line each for 2Nos 11kv feeder from proposed 1 x 15MVA Injection substation at Futo Owerri, New Owerri district	150 mm2	Futo, Owerri	2	Sep-21	2.2
4	Construction of 3Nos 11kv feeders of 3km each from proposed Naze Injection substation, Owerri district.	150 mm2	Owerri district	3		1.25
5	Creation of Okpara Avenue, 1.1km 11kv feeder from Tunnel Injection Substation	150 mm2	Okpara Avenue, Enugu	1.1	Apr-21	0.75
6	Proposed Maintenance of 2km FUT 11kv feeder and rerouting of the rural (Uralta) segment for better load management	150 mm2	Owerri district	2	May-21	0.5
7	Creation of 0.75km Awka Business feeder using AB cable and spare breaker	150 mm2	Nibo, Awka	0.75	Apr-21	2
8	1.65km Extension of Nnewichi 11kv feeder to Ibefo Factory using HT cable	150 mm2	Otolo, Nnewi	1.65	Apr-21	3
9	Transfer of College of Education Nsugbe to Nsugbe 11kv feeder - EEDC	150 mm2	Nsugbe, Onitsha	0	Apr-21	3
10	Creation of 3.7km Nkwelle 2 11kv feeder and capacity enhancement of 33/11k power transformer at 3 -3, Injection substation	150 mm2	Nkwelle, Onitsha	3.7	Apr-21	1
11	Proposed 2.15km reconfiguration of GRA & Inland 11kv feeders	150 mm2	Onitsha	2.15	Apr-21	1
12	Construction of 3.9km dedicated 11kv feeder to Shoprite and other MD Customers, Umuhia district	150 mm2	Umuhia	3.9	May-21	2.2

Distribution Network: lines

Project Type: Rehabilitation of 11KV Feeder

#	Project Description	Type of Rehabilitation	Location	Route Length (km)	Project Completion	Expected Impact in MW
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						Date (MM - YY)	
1	Rehabilitation of Azikiwe, Ndume, Olokoro2, Amachara, Old Umuahia, Umudike and Worldbank 11kv feeders, Umuahia district	Reconductoring/Replacement of poles and accessories	Umuahia	13.69		Jun-21	0
2	Rehabilitation of Okpuno, Enugu Agidi, Niba, Ifite, Unizik, Amansea, Industrial, Ukpokor and Nimo 11kv feeders, Awka district	Reconductoring/Replacement of poles and accessories	Awka	10.94		Jun-21	0
3	Rehabilitation of Nnewichi, Otolo, Mbanagu, Uvuagu, Nkwoedo, Iballa, Umvofor and Ubanu 11kv feeders, Nnewi district	Reconductoring/Replacement of poles and accessories	Nnewi	5.97		Jun-21	0
4	Rehabilitation of Water works 11kv feeder, Ogbaru district	Reconductoring/Replacement of poles and accessories		0.71		Jun-21	0
5	Rehabilitation of Minaj 1, Ogidi, Toligate, Nkpor, Ezeiwaka, Nwaziki, Avenco and Ugwuagba/Mgbemena 11kv feeders, Ogidi district	Reconductoring/Replacement of poles and accessories	Ogidi	18.29		Jun-21	0
6	Rehabilitation of Nsugbe, Housing, Iwaka, Bida, Market, GRA and Mgbuka 11kv feeders, Onitsha district	Reconductoring/Replacement of poles and accessories	Onitsha	4.64		Jun-21	0
7	Rehabilitation of industrial, Azuiyiokwu2 and Azuiyiokwu 1, 11kv feeders, Abakaliki district	Reconductoring/Replacement of poles and accessories	Abakaliki	2.22		Jun-21	0
8	Rehabilitation of Phase 6, Emene 1, Nowas and 9th Mile Industrial 11kv feeders, Abakpa district	Reconductoring/Replacement of poles and accessories	Abakpa	4.55		Jun-21	0

9	Rehabilitation of Unec and Gariki 11kv feeders, Awkunanaw district	Reconductoring/Replacement of poles and accessories	Awkunanaw	3.09	Jun-21	0
10	Rehabilitation of Aku, Onuiyi, Ugwuoye, Campus and Township 11kv feeders, Nsukka district	Reconductoring/Replacement of poles and accessories	Nsukka	6.71	Jun-21	0
11	Rehabilitation of Coal Camp, Golf, Oji Township, Onitsha Rd., Power house and Chime 11kv feeders, Ogui district	Reconductoring/Replacement of poles and accessories	Ogui	12.86	Jun-21	0
12	Rehabilitation of World bank 11kv feeder, New Owerri district	Reconductoring/Replacement of poles and accessories	New Owerri	3.77	Jun-21	0
13	Rehabilitation of Amaigbo, Ihioma, Owerri Rd, Orlu township and Umuaka 11kv feeders, Orlu district	Reconductoring/Replacement of poles and accessories	Orlu	11.27	Jun-21	0
14	Rehabilitation of Naze, Emekuku, Mbieri, Township and New Owerri 11kv feeders, Owerri district	Reconductoring/Replacement of poles and accessories	Owerri	7.72	Jun-21	0

Distribution Network: lines

Project Type: Construction and Rehabilitation of 0.400kV Feeder

#	Project Description	Type of Project	Overhead/ underground	Conductor Size (mm ²)	Location	Route Length (km)	Project Completion Date (MM - YY)
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1	Construction of additional 102 nos LV circuit (13 spans ea. With upriser cable) for overloaded LT lines, All districts	Construction	Overhead	100mm ²	All districts	59.67	May-21
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Distribution Network: stations

Project Type: New Construction, Reinforcement and Standardisation of Distribution Sub-station

#	Name of Substation	Transformation Voltage (kV)	Rating - kVA	Location	Quantity	Project Completion Date (MM - YY)
1	Construction of 3nos 300kva 11/0.415kv relief substation (Bende, Igbo and Igberere substations), Umuahia district	11/0.415	300	Umuahia district	3	Jul-21
2	Construction of 10nos 300kva 11/0.415kv relief substations (Ezewuzie, Women Affairs rd., Kabe College Rd, Festus Avenue, St. Joseph de Worker church, Sir ify Onuma str., Dan Maduka, Omuko Str., Amikwo and O.C Gambia Str), Awka district	11/0.415	300	Awka district	10	Aug-21
3	Construction of 3nos 300kva 11/0.415kv relief substation (Ama Alpha2, Nwakwazu 2 Uga & Mkwu Market Uga 2), Ekwulobia district	11/0.415	300	Ekwulobia district	3	Aug-21
4	Construction of 1 nos 300kva 11/0.415kv relief substations (Ekeh Eziora, Ntu Okija rd, Ugwuohelu, St. Matthew Anglican, Ugwuorie, Four Corner, Onwa Oba, Uruagu Oba, 8th Miles, Isi Umunakwa, Nwafar and St. Monica), Nnewi district	11/0.415	300	Nnewi district	11	Aug-21

5	Construction of 4nos 300kva 11/0.415kv relief substation (Ikaro United, Udeaja Furniture, Obibuanyi and Gbalie Str.), Ogbaru district	11/0.415	300	Ogbaru district	4	Aug-21
6	Construction of 7nos 300kva 11/0.415kv relief substation (Uruegbe Umuoji, Monastery rd., Achalla Uno, Umusiame Nkpor, Nkwo Obosi, Amafor Nkpor Uno and Isingwu Nkpor), Ogidi district	11/0.415	300	Ogidi district	7	Aug-21
7	Construction of 8nos 300kva 11/0.415kv relief substation (St. Theresa, Ndubuisi, Oyiulu, 2nd Gate, Osuna-Ogbuli, Pano 1, Ogbomanu, Flanigan), Onitsha district	11/0.415	300	Onitsha district	8	Aug-21
8	Construction of 10nos 300kva 11/0.415kv relief substations (Water works, Lawrence Onor, Eze Nwuba, Quarry 1, Aniekwena, Achi, Ogbaga rd. & Udensi, Awolowo, Holy Ghost-Mauneki & Ebonyi Voice), Abakaliki district	11/0.415	300	Abakaliki district	10	
9	Construction of 9nos 300kva 11/0.415kv relief substations (Ifo layout, Ukwu Manga, Ugbonebedum, J.C Ugwu, Obije ifenze, Nnamchi, Asadu 2, Old Alulu & Nkpologwu), Abakpa district	11/0.415	300	Abakpa district	9	Aug-21
10	Construction of 6nos 300kva 11/0.415kv relief substations (Water Works along Awkuzu, Merken, Eziokwe, Unubi Achara Layout, Evaristus Catholic Church, Liberation Mbaeze Str.), Awkunanaw district	11/0.415	300	Awkunanaw district	6	Aug-21
11	Construction of 5nos 300kva 11/0.415kv relief substations (Odenigbo, Bob Remus, New Anglican rd., Milipat & John Attama), Nsukka district	11/0.415	300	Nsukka district	5	Aug-21

12	Construction of 9nos 300kva 11/0.415kv relief substations (Mike Omeje Avenue Golf Estate, Nnolim Nnaji Avenue Golf Estate, Onuasata Round about, Calvary Str., Ezekwesili, Unity Estate Maryland, Monarch, Ioma Linda Maryland & Amalu Str. Off Nza Str.), Ogui district	11/0.415	300	Ogui district	9	Aug-21
13	Construction of 6nos 300kva 11/0.415kv relief substations (Amato Uzoubi, Claret, Ebikoro Umueje, Rectors', Town 2 Fed. Housing Estateand Urban Sec. Sch. Off St. John Cath. Church), New Owerri district	11/0.415	300	New Owerri district	6	Aug-21
14	Construction of 5nos 300kva 11/0.415kv relief substations (St. Joseph Cath. Church, Amaigbo, St. Catherine Nkwelle, Owerre Nkworji Amaigbo, Okwu substation Amaigbo and Okorameje relief SS Orlu), Orlu district	11/0.415	300	Orlu district	5	Aug-21
15	Construction of 10nos 300kva 11/0.415kv relief substations (Apuche, EEDC Royce rd., Egbukale, Engr. Obi , Geatino, Ihem Davies, Imerienwa, Ishiuzo, JDP and Old Winners), Owerri district	11/0.415	300	Owerri district	10	Aug-21
16	Proposed Okwase Str. 1 x 300kva 33/0.415kv Relief Substation Abakaliki	11/0.415	300	Abakaliki district	1	Aug-21
17	Proposed IBB Phase 1, 1 x 300kva 11/0.415kv relief substation, Umuahia district	11/0.415	300	Umuahia district	1	Aug-21
18	Proposed relocation of 1 x 300kva 11/0.415kv substation at Kechis Avenue to Zone 9 rd. Umuahia district	11/0.415	300	Umuahia district	1	Aug-21

Network: Injection Substations (33/11kV)

Project Type: Construction, Reinforcement and Standardisation of Injection Sub-station

#	Name of Substation	Location	Rating - MVA	Type (Manned/unmanned)	Type of work	N° of units	Project Completion Date (MM - YY)	Expected Impact (MW)
1	Construction of Commissioners quarters 1 x 15MVA 33/11kv Injection Substation with 3nos 11kv feeders for power evacuation	Umuhia	15	Manned	New Construction	1	Sep-21	3.3
2	Construction of 7.5MVA 33/11kv substation with extension of Army Barracks 33kv feeder to Comprehensive Secondary School with associated 11kv feeders to de-load Ezeiwaka, Nwaziki, Okpoko and Awada 11kv feeders, Ogidi district	Ogidi	7.5	Manned	New Construction	1	Sep-21	2.8
3	Construction of Elim 1 x 15MVA 33/11kv Injection substation and derating of 33/0.415kv transformers, Enugu. Abakpa district	Enugu	15	Manned	New Construction	1		
4	Construction of 1 x 15MVA 33/11kv Injection substation at Futo Junction (PH Rd.), New Owerri with 2nos 33kv Switchgear, 7Nos VCB Inobar and 1No. Control and Protection	Futo Junction, Port Harcourt Rd. New Owerri district	15	Manned	New Construction	1	Sep-21	3

	Panel, New Owerri district											
5	Proposed construction of 1 x 15MVA 33/11KV Injection S/S at Naze for deloading of Naze 11kv feeder from Egbu Rd. Injection Substation, Owerri district	Naze Owerri	15	Manned				New Construction	1	Oct-21		1.2
6	Proposed East 1 x 15MVA 33/11KV Injection Substation	Agbani	15	Manned				New Construction	1	Oct-21		2.2
7	Completion and energization of 2nd 15MVA Transformer at Umudike Injection Substation	Umudike	15	Manned				New Construction	1	Oct-21		1.8
8	Installation of Additional 1 X 15MVA 33/11KV Transformer at Ochudo Injection Substation	Abakaliki	15	Manned				Additional Power Transformer	1	Oct-21		2.8
9	Installation of Additional 7.5MVA 33/11KV Capacity at Nwoarievbi Inj. SS (Excluding Trf. Cost)	Orlu	7.5	Manned				New Construction	1	Oct-21		1.5
10	Proposed IMSU 7.5 MVA , 33/11KV S/S	Owerri	7.5	Manned				New Construction		Oct-21		1.8

11	Proposed Obinze 15MVA, 33/11KV Injection S/S from Oguta CBN Leg (New Owerri 33KV Feeder)	New Owerri	15	Manned	New Construction	1	Sep-21	2.75	
12	Provision for installation of 7.5MVA 33/11KV Transformer at Kingsway Injection Substation, Enugu and construction of 3km 11kv lines to de-load existing 11kv feeders	Enugu	7.5	Manned	Additional Power Transformer				
13	Additional 15MVA to New Owerri 1 x 15MVA 33/11KV Injection Substation Imo State with: 2nos. 33kv Switchgear, 7nos VCB Indoor and 1no. Control and protection panel.	New Owerri	15	Manned	Additional Power Transformer		Sep-21	3.5	
14	Upgrading of 9nos 7.5MVA 33/11KV Power transformers to 15MVA at the following Substations: Nike Laka Enugu, Enugu Ukwu x 2, ABS Awka, Uruagu Nnewi, Nsukka Main, Fegge Onitsha, Azaraegbelle Owerri & Ubakala Umuahia, Emene Enugu.	Enugu, Enugu Ukwu, Awka, Nnewi, Nsukka, Onitsha, Owerri & Umuahia	15	Manned	Upgrading	9	Sep-21	9	

15	Upgrading of 7.5MVA to 15MVA Transformer at 3 -3, Injection Substation Onitsha, Anambra State with 1 no. Control and protection panel	Onitsha	15	Manned	Upgrading	1	Sep-21	2.1
16	Upgrading of 7.5MVA 33/11KV Injection Substation at Loma Linda Enugu State to deload Unec 11kv feeder and create Maryland 2, 11kv feeder and deload existing Maryland feeder with 2nos 33kv Switchgear, 7nos VCB Indoor and 1no. Control and protection panel	Enugu	15	Manned	Upgrading	1	Sep-21	1.8
17	Proposed Enugu Agidi 7.5mva 33/11kv Injection substation	Awka district	7.5	Manned	New Construction	1	Aug-21	1.86
18	Proposed Ogbunike 1 x 15mva 33/11kv Injection substation	Ogbunike	15	Manned	New Construction	1	Dec-21	2.9
19	Proposed Abatele 1 x 15mva 33/11kv Injection substation	Abatele	15	Manned	New Construction	1	Dec-21	2
20	Proposed 2x15 MVA 33/11kv 7up Injection substation	Abakaliki	30	Manned	New Construction	2	Dec-21	3
21	Proposed 2 x 15MVA 33/11KV Afikpo Road Injection substation	Afikpo	30	Manned	New Construction	2	Dec-21	3

22	Proposed Premier Layout 1 x 15MVA 33/11KV Injection Substation	Enugu	15	Manned	New Construction	1	Dec-21	2.1
23	Commissioning of Oba Injection Substation and Derating of 47Nas DSS from 33/0.415kv to 11/0.415kv	Oba	15	Manned	Capacity addition to the network	2	Jun-21	1.8
24	Upgrade of Ugurunwasike 1 x 15MVA 33/11kv Injection Substation to 1 x 15MVA & 7.5MVA Substation	Ogidi	7.5	Manned	Additional Capacity	1	Jun-21	2.4

Network: Standardisation of Existing Injection Substations (33/11KV)

Project Type: Replacement of Switch Gears, Control Panel and Protection Equipment

#	Name of Substation	Description	Location	Quantity	Project Completion Date (MM - YY)	Expected Impact
1	Substation A	33kv indoor Control Panel				
2	Atani Road Inj. SS	Procurement of 33kv Outdoor breakers and 33kv line control panel at Atani road 2 x 15MVA Substation	Atani Road, Ogbaru district	2	Apr-21	Improve d feeder reliabilit y

3	Egbu TCN	Procurement of 33kv Outdoor breakers and line control panel at Egbu TCN 2 x 15MVA Substation.	Egbu, Owerri district	2	Apr-21	-do-
4		Provision of separate 33KV O/D breaker for Abiriba line from Nkata Alike (Turn - in, Turn - out)	Abiriba, Umuhia district	2	Apr-21	-do-
5	Atani Road Inj. Ss	Procurement of 11kv Indoor 7 Board panels for replacement of obsolete one at Atani road 2 x 15MVA 33/11KV Inj. Ss	Atani Road, Ogbaru district	7	Apr-21	-do-
6	Army Barracks Inj. Ss	Procurement of 11kv Indoor 7 Board panels for replacement of Obsolete ones at Army Barracks 2 x 15MVA 33/11KV Inj. Ss	Army barracks, Ogidi district	7	Apr-21	-do-

7	Awada 2, Inj. Ss	Procurement of 11kv Indoor 7 Board panels for replacement of obsolete ones at Awada 2, 2 x 15MVA 33/11K Inj. Ss	Awada, Ogidi district	7	Apr-21	do
8	Egbu TCN	Procurement of 11kv Indoor 7 Board panels for replacement of obsolete ones at Egbu TCN 2 x 15MVA 33/11KV Inj. Ss	Egbu, Owerri district	7	Apr-21	do
9	Nibo Inj. Ss	Replacement of obsolete 11kv Indoor panels 7nos VCB Indoor at Nibo Injection Substation and 1no. Control and protection panel	Nibo, Awka district	8	Apr-21	do
10	Ugwunwasike Inj. Ss	Replacement of obsolete 11kv Indoor panels at Ugwunwasike Injection Substation	Ugwunwasike, Ogidi district	8	Apr-21	do

11	Corner Injection Substation with 7 nos VCB Indoor protection, Control And Protection Panel	Replacement of Obsolete 11kv Indoor panels at Thinkers' Corner Injection Substation with 7 nos VCB Indoor and 1 no. Control and protection panel	Thinkers' Corner, Abakpa district	8	Apr-21	-do-
12	Substation Located At Egbu Road, I.E 7Nos Vcb Indoor Indoor and 1 no. Control and protection panel	Replacement of obsolete 11kv Indoor panels at the Injection Substation located at Egbu road, i.e 7 nos VCB Indoor and 1 no. Control and protection panel	Egbu, Owerri district	8	Apr-21	-do-
13		Procurement and Installation of 50nos Auto reclosers at major tee-offs (33kv feeders) without breakers and on lengthy 33kv feeders	Various locations within EEDC Network area	50	Apr-21	-do-

14	Auto reclosure - 1No. For Umunya 33kv feeder &	Provision and Installation of 3Nos Auto reclosure . 1No. For Umunya 33kv feeder & 2Nos for Ogidi 11kv feeder	Ogidi district	3	Apr-21	-do-
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AT&C Loss Reduction Plan

#	Name	Description	Quantity	Project Completion Date (MM - YY)	Expected Impact
1	Propose AT&C loss reduction A				
2	Replacement of aged and failure prone 15MVA Power transformer at Nibo Injection Substation	Existing 15MVA Power trf. at Nibo Inj. to be replaced.	1	Apr-21	Improved feeder reliability
3	Replacement of aged 15MVA Power transformer at Independence Layout Injection Substation Enugu State	-do-	1	Apr-21	-do-
4	Replacement of 1nos 15MVA Power transformers at Kingsway Injection Substation	-do-	1	Apr-21	-do-
5	Replacement of aged 1no 15MVA Power transformers at E15 (Z02), Egbu	-do-		Apr-21	-do-
6	Replacement of vandalized 1 x 15MVA Transformer and Rehabilitation of vandalized Switch yard at Orji Inj. SS Imo State with 1nos 33kv Switchgear, 7nos VCB Indoor and 1No. Control and protection panel	-do-	1	Apr-21	-do-

7	Replacement of 2nos 1.5MVA Power transformers at Atani Injection Substation	-do-	2	Apr-21	-do-
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Customer Service Improvement Plan

#	Name	Description	Quantity	Project Completion Date (MM - YY)	Expected Impact
1					
2	Procurement of 94nos distribution transformers of various capacities to replace failed DSS transformers in our network	300kva & 500kva transformers for replacement of failed ones	94	May-21	Improved supply availability to customers
3	Procurement of 78nos 500kva 11/0.415kv & 20nos 500kva 33/0.415kv transformers for uprating of overloaded 300kva transformers	500kva transformers for uprating	98	May-21	-do-

IT Investments (AMI)

#	Name	Description	Project Completion Date (MM - YY)	Expected Impact

Advanced Metering infrastructure for integrated smart meter.	Facility for communication/monitoring /data mgt system that enable two way comm bw utility and customer	Apr-21	Improve efficiency in data Mgt and system operations
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Network Metering (Smart Meters)

#	Project Description	Description	Quantity	Project Completion Date (MM - YY)	Expected Impact
1	33kV feeder meter C/W CT&VT	New			
2	Procurement of 95nos incomer 11kv feeder meters	Upgrading	95	Apr-21	Introduce efficiency in energy auditing
3	Procurement of 20nos Pole mount incomer 33kv feede meters for unmanned Inj. SS	New	20	Apr-21	-do-
4	Procurement of 32nos check meters for TCN Power transformers	New	32	Apr-21	-do-
5	Procurement of 30nos 11kv feeder meters	New	30	Apr-21	-do-
6	Procurement of 10nos 33kv feeder meters	New	10	Apr-21	-do-
7	Procurement of 10nos pole mounted 11kv Interface meters	New	10	Apr-21	-do-
8	Procurement of 20nos Pole mounted 33kv Interface meters	New	20	Apr-21	-do-
9	Procurement of 4000nos DSS Meters	New	4000	Apr-21	-do-

Other Service Improvement Plan

#	Name	Description	Other	Project Completion Date (MM - YY)	Expected Impact in MW
1	Digital Ratiometer	Procurement of 18nos Digital Ratiometer (megger)		Jul-21	0
2	Transformer Oil tester	Procurement of 4nos Transformer Oil Tester		Jul-21	0
3	Differential Relays	Procurement of 10nos Differential Relays		Jul-21	0
4	Over Current Relay	Procurement of 50nos Over Current Relay		Jul-21	0

Appendix 2 - Details of Planned 2022 Investments for Enugu Electricity Distribution Company

Distribution Network: lines

Project Type: Construction of 33kV Feeder

#	Project Description	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
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1	Construction of a dedicated 5.5km 33kv feeder from On-going Okigwe 132/33kv Substation to Okigwe 2 x 7.5MVA 33/11KV Injection substation.	Okigwe	5.5	Dec-22	3
2	Construction of 20km 33kv feeder from On-going Okigwe TCN Substation to Arandizuogu Injection Substation.	Okigwe	20	Dec-22	4
3	Proposed construction of 6km 33kv feeder from on-going Okigwe TCN to Uhuru.	Uhuru	6	Dec-22	2
4	Dual circuit reconstruction of Aguleri/Enugwu ukwu 33kv feeder to Awkuzu Injection SS	Awka	24.54	Apr-22	6
5	Proposed construction 33KV feeder from Arochukwu 1 x 40MVA, 132/33KV TCN STATION	Arochukwu	50	Dec-22	6

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6	Okigwe 33KV fdr Uralita Junction To Orji, 3 KM IN OWERRI	Owerri	3	May-22	2
7	Obowo 33KV , Malaysia Market, 1KM IN MBAISE DISTRICT	Mbaise district	1	May-22	0
8	Construction of Nibo/Enugwu Ukwu 33kv fdr. (10.18KM) IN AWKA	Awka	10.18	Dec-22	2
9	CONSTRUCTION OF 3NOS, 70KM 33KV FEEDERS with 7 auto-Reclasers each (Namely;OKPOSI,AFIKPO AND ABOMEGE)FROM AMASIRI TCN,New network to de-load Itigidi ,Ezillo, Nkwaegwu and Amechi 33Kv feeder	Abakaliki district	70	Dec-22	6
10	Proposed 4km 33KV double circuit line to independence layout in j ss (independence layout and Govt House 33KV)	Enugu	4	Dec-22	0

11	5 KM Naze Aba Road Owerri Airport 33KV IN NEW OWERRI	NEW OWERRI	5	May-22	1
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Distribution Network: lines

Project Type: Rehabilitation of 33kV Feeder

#	Project Description	Type of Rehabilitation	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	100KM of 33KV PLANNED REPLACEMENT OF OVERHEAD LINE IN EZILO 33KV EBONYI	Reconductoring/Replacement of poles & Accessories	Abakaliki district	100	Apr-22	6
2	100KM of 11KV PLANNED REPLACEMENT OF OVERHEAD AT ISIHIEKE 33KV EBONYI	Reconductoring/Replacement of poles & Accessories	Abakaliki district	100	Apr-22	5
3	Rehabilitation of Ihuku Ozalla	Reconductoring/Replacement of poles & Accessories	Awkunanaw district	30	Apr-22	2
4	Rehabilitation of Amechi 33KV FEEDER AWKUNANAW	Reconductoring/Replacement of poles & Accessories	Awkunanaw district	200	Apr-22	2
5	Rehabilitation of Ezeagu 33KV, ABAKPA	Reconductoring/Replacement of poles & Accessories	Abakpa district	20	Apr-22	2
6	Rehabilitation of Udi 33KV, ABAKPA	Reconductoring/Replacement of poles & Accessories	Abakpa district	10	Apr-22	3

7	Rehabilitation of Ajali 33KV	Reconductoring/Replacement of poles & Accessories	Abakpa district	10	Apr-22	2
8	Rehab. 2km of 33KV Lines Airport 33KV Feeder IN IMO	Reconductoring/Replacement of poles & Accessories	Owerri district	2	May-22	2
9	Rehab. 1.5KM of Naze 11KV Feeder, Owerri District	Reconductoring/Replacement of poles & Accessories	Owerri district	1.5	May-22	0
10	Rebab. 20 KM Orlu 33KV Feeder, ORLU	Reconductoring/Replacement of poles & Accessories	Orlu district	20	May-22	2

Distribution Network: lines

Project Type: Construction of 11KV Feeder

#	Project Description	Overhead/ underground	Conductor Size (mm ²)	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	Proposed construction of 3No 11KV feeder to feed from Ihechiawa 1 x 15MVA, 33/11KV injection substation	Overhead	150 mm ²	ABIA STATE	15	Dec-22	6
2	Proposed construction of 3No 11KV feeder to feed from Arachukwu 1 x 15MVA, 33/11KV injection substation	Overhead	150 mm ²	ABIA STATE	15	Dec-22	0

3	Proposed Additional 2No 11KV feeder from loma linda inj ss(marmarch 11kv and hillview 11kv)	Overhead	150 mm ²	ENUGU	1.5	Dec-22	4
4	proposed Additional 2No 11KV feeder form Amechi Uwani inj ss (Amechi road 11kv and Ebony paint 11KV)	Overhead	150 mm ²	ENUGU	2.5	Dec-22	4
5	Proposed Additional 2No 11KV feeder from New Haven Injection ss (Chime Avenue 11KV and Independence Layout)	Overhead	150 mm ²	NEW HAVEN ENUGU	6	Dec-22	4
6	Proposed radiation of 10KM 11KV Coal Camp 2 11KV and Hilltop 2 11KV	Overhead	150 mm ²	KINGSWAY ENUGU	10	Dec-22	4
7	Proposed radiation of 10KM 11KV Artisan 2 11KV and Ogui road 11KV	Overhead	150 mm ²	ENUGU	10	Dec-22	4
8	3 Nos 11KV fdrs from proposed Amaraku Inj S/S	Overhead	150 mm ²	IMO	9	Dec-22	0

Distribution Network: lines

Project Type: Rehabilitation of 11kV Feeder

#	Project Description	Type of Rehabilitation	Conductor Size (mm ²)	Location	Route Length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	Rehab. 5Km of Ihioma 11KV Lines Orlu District	Reconductoring/Replacement of poles & accessories	150 mm ²	OKIGWE	5	May-22	1

Distribution Network: lines

Project Type: Construction and Rehabilitation of 0.400kV Feeder

#	Project Description	Type of Project	Overhead/underground	Conductor Size (mm ²)	Location	Route length (km)	Project Completion Date (MM - YY)	Expected Impact in MW
1	Construction of 69.3km LT lines for proposed relief substations in Awka district	Construction	Overhead	100 mm ²	Awka district	69.3	Jun-22	1
2	Construction of 25.2km LT lines for proposed relief substation in Ekwulobia district	Construction	Overhead	100 mm ²	Ekwulobia district	25.2	Jun-22	2
3	Construction of 21km LT lines for proposed relief substation in Nnewi district	Construction	Overhead	100 mm ²	Nnewi district	21	Jun-22	1

4	Construction of 27.3km LT lines for proposed relief substation in Ogbaru district	Construction	Overhead	100 mm ²	Ogbaru district	27.3	Jun-22	1
5	Construction of 58.8km LT lines for proposed relief substation in Ogidi district	Construction	Overhead	100 mm ²	Ogidi district	58.8	Jun-22	2
6	Construction 23.1km of LT lines for proposed relief substation in Onitsha district	Construction	Overhead	100 mm ²	Onitsha district	23.1	Jun-22	1

Distribution Network: lines

Project Type: Construction of Distribution Transformer

#	Name of Substation	Transformation Voltage (kV)	Rating · kVA	Type of work (New Construction or Replacement)	Location	Quantity	Project Completion Date (MM - YY)	Expected Impact in MW
1	Completion of 3nos 500kva 11/0.415kv suspended relief substation projects in Awka district	11/0.415	300	New Construction	Awka district	3	Sep-22	0

2	Completion of 1no. 300kva 11/0.415kv suspended relief substation project in Nnewi district	11/0.415	300	New Construction	Nnewi district	1	Sep-22	0
3	Completion of 1no. 300kva 11/0.415kv suspended relief substation project in Ogui district	11/0.415	300	New Construction	Ogui district	1	Sep-22	0
4	Completion of 2nos 500kva 11/0.415kv relief sustation projects in Ogbaru district	11/0.415	500	New Construction	Ogbaru district	2	Sep-22	0
5	Completion of 2nos 500kva 11/0.415kv relief substation projects in Ogidi district	11/0.415	500	New Construction	Ogidi district	2	Sep-22	0





6	Completion of suspended 2nos 500kva 11/0.415kv substation in Onitsha district	11/0.415	500	New Construction	Onitsha district	2	Sep-22	0
7	Completion of suspended 2nos 500kva 33/0.415kv substation in Abakaliki district	11/0.415	500	New Construction	Abakaliki district	2	Sep-22	0
8	Completion of suspended 2nos 500kva 11/0.415kv substation in Abakpa district	11/0.415	500	New Construction	Abakpa district	2	Sep-22	0
9	Completion of suspended 1no. 300kva 11/0.415kv relief substation in New Owerri district	11/0.415	300	New Construction	Owerri district	1	Sep-22	0

1	Completion of suspended 1no. 500kva 11/0.415kv relief substation in Amakohia New Layout, Owerri district	11/0.415	500	New Construction	New Owerri district	1	Sep-22	0
1	Completion of 2nos 300kva 11/0.415kv relief substation projects in Umuahia	11/0.415	300	New Construction	Umuahia	2	Sep-22	0

Network: Injection Substations (33/11KV)

Project Type: Construction, Reinforcement and Standardisation of Injection Sub-station

#	Name of Substation	Location	Rating - MVA	Type (Manned/unmanned)	Type of work	N° of units	Project Completion Date (MM - YY)
1	Proposed Ihechiowa 1 x 15MVA, 33/11KV transformer	Ihechiowa	15	Manned	New Construction	1	Dec-22
2	Proposed Arachukwu 1 x 15MVA, 33/11KV transformer	Arachukwu	15	Manned	New Construction	1	Dec-22

UMUAHIA DISTRICT									
3	Proposed Amaraku 15 MVA, 33/11KV Injection 5/S from Okigwe 33KV Feeder	Amaraku	15	Manned	New Construction	1			Dec-22

AT&C Loss Reduction Plan

#	Name	Description	Quantity	Project Completion Date (MM - YY)	Expected Impact
1	Implementation of HVDS Scheme at Ezeiwaka Industrial Cluster	LOSS REDUCTION	1	Apr-22	2
2	Implementation of HVDS Schemes for high loss 11kv feeders in Awka district (30nos)	LOSS REDUCTION	30	Apr-22	1
3	Aerial bunched cable requirement for Awka district (3 drums of 10,000mtrs)	LOSS REDUCTION	30000	Apr-22	0
4	Implementation of HVDS Schemes for high loss 11kv feeders in Ekwulobia district (20nos)	LOSS REDUCTION	20	Apr-22	1
5	Aerial bunched cable requirement for Ekwulobia district (2 drums of 10,000mtrs)	LOSS REDUCTION	20000	Apr-22	0
6	Implementation of HVDS Schemes for high loss 11kv feeders in Nnewi district (30nos)	LOSS REDUCTION	30	Apr-22	0
7	LOSS REDUCTION IN OBIAGU AREA USING AB CABLE IN OGUI DISTRICT	LOSS REDUCTION	3600	Apr-22	1
8	LOSS REDUCTION IN MONARCH USING AB CABLE IN OGUI DISTRICT	LOSS REDUCTION	4000	Apr-22	1

9	LOSS REDUCTION IN ASATA AREA USING AB CABLE	LOSS REDUCTION	3600	Apr-22	2
10	LOSS REDUCTION IN NEW LAYOUT AROUND COLLEGE RD AREA USING AB CABLE IN OGUI DISTRICT	LOSS REDUCTION	2000	Apr-22	0
11	LOSS REDUCTION IN IND. L/O HUMPHRY NWOSU S/S AREA IN OGUI DISTRICT	LOSS REDUCTION	3600	Apr-22	1
12	LOSS REDUCTION IN MARLUM ESTATE USING AB CABLE IN ABAKPA DISTRICT	LOSS REDUCTION	2000	Apr-22	1
13	LOSS REDUCTION IN NIKE LAKE ROAD AREA USING AB CABLE IN ABAKPA DISTRICT	LOSS REDUCTION	3600	Apr-22	2
14	LOSS REDUCTION IN ABAKPA HOUSING USING AB CABLE IN ABAKPA DISTRICT	LOSS REDUCTION	4000	Apr-22	1
15	LOSS REDUCTION IN ABAKPA FROM 1ST BUSTOP TO LIBERTY IN ABAKPA DISTRICT	LOSS REDUCTION	1000	Apr-22	1
16	25Nos HVDS 50KVA, 11/0.415KV at Egbeada Housing Estate IN OWERRI	LOSS REDUCTION	25	Jun-22	0
17	30Nos HVDS 50KVA, 11.0.415KV S/S At New Ireite Estate, Owerri District	LOSS REDUCTION	30	Sep-22	1
18	20Nos HVDS 50KVA, 11/0.415KV S/S Concord Fdr at Concord Area Owerri	LOSS REDUCTION	20	Oct-22	1
19	20 Nos HVDS 50KVA, 11/0.415KV Pole Mounted ss at 11KV Township Fdr IN UMUAHIA	LOSS REDUCTION	20	Nov-22	1
20	DERATING of 42Nos 33/0.415KV to 500KVA 11/0.415KV IN ESUT INJ S/S	LOSS REDUCTION	42	Dec-22	0
21	Derating of 30x3 Nos of Distribution Transformer from Amaraku Inj S/s	LOSS REDUCTION		Dec-22	0
22	Installation of 15Nos 33kv 800Amps Auto reclosers on 6Nos existing 33kv feeders in Ebanyi State	LOSS REDUCTION	15	Jun-22	0
23	Replacement of 190,000M of LT line to RECTLIN 90MM2 X 0.415KV cable FOR ENERGY THEFT AREAS	LOSS REDUCTION	190000	Jun-22	0

24	3No 33KV Auto Recloser on Amechi 33KV	LOSS REDUCTION	3	Jun-22	0
25	2No 33KV Auto Recloser on Ezeagu 33KV	LOSS REDUCTION	2	Jun-22	0
26	18No Sectionalizer on Udi 33KV Tee Offs	LOSS REDUCTION	18	Jun-22	0
27	10No sectionalizer on NNPC 33KV Tee Offs	LOSS REDUCTION	10	Jun-22	0
28	18No Sectionalizer on Achi 33KV Tee Offs	LOSS REDUCTION	18	Jun-22	0
29	Installation of 3 Nos 33KV Auto recloser at Airport 33KV Feeder	LOSS REDUCTION	3	Jun-22	0
30	Installation of 3 Nos 33KV Auto recloser at Oguta 33KV Feeder	LOSS REDUCTION	3	Jun-22	0
31	Installation of 3 Nos 33KV Auto recloser at Orlu 33KV Feeder	LOSS REDUCTION	3	Jun-22	0
32	Installation of 3 Nos 33KV Auto recloser at Mbaize 33KV Feeder	LOSS REDUCTION	3	Jun-22	0
33	Installation of 3 Nos 33KV Auto recloser at Okigwe 33KV Feeder	LOSS REDUCTION	3	Jun-22	0
34	Installation of 3 Nos 33KV Auto recloser New Owerri 33KV feeder	LOSS REDUCTION	3	Jun-22	0
35	Proposed completion and commissioning of 100nos PMU HVDS Project at Federal Housing Trans Ekulu	LOSS REDUCTION	100	Aug-22	2
36	Proposed completion and commissioning of 100nos PMU HVDS Project at Topland Awkunanaw	LOSS REDUCTION	100	Aug-22	1
37	Proposed completion and commissioning of 20nos HVDS Project on Ibagwa 33kv feeder at Nsukka District	LOSS REDUCTION	20	Aug-22	1
38	Proposed completion and commissioning of 50nos HVDS Projects on Abakpa 2, 11KV feeder at Ugbene Area Abakpa	LOSS REDUCTION	50	Aug-22	2

39	Proposed completion and commissioning of PMU 50nos HVDS Project on Emene 1, 11kv feeder at Thinkers' Corner	LOSS REDUCTION	50	Aug-22	1
40	Proposed Completion and Commissioning of PMU HVDS Project at Amazing love Area - 100Nos	LOSS REDUCTION	100	Aug-22	2
41	Proposed completion and commissioning of PMU HVDS Project at Acharya layout 11kv feeder Awkunanaw- 100Nos	LOSS REDUCTION	100	Aug-22	2

Network Metering (Smart Meters)

#	Project Description	Description	Quantity
1	33kv feeder meter C/W CT&VT	New	110
2	11kv feeder meter C/W CT&VT	Upgrading	105
3	33/0.400kV DT meter		105
4	11/0.400kV DT meter		80