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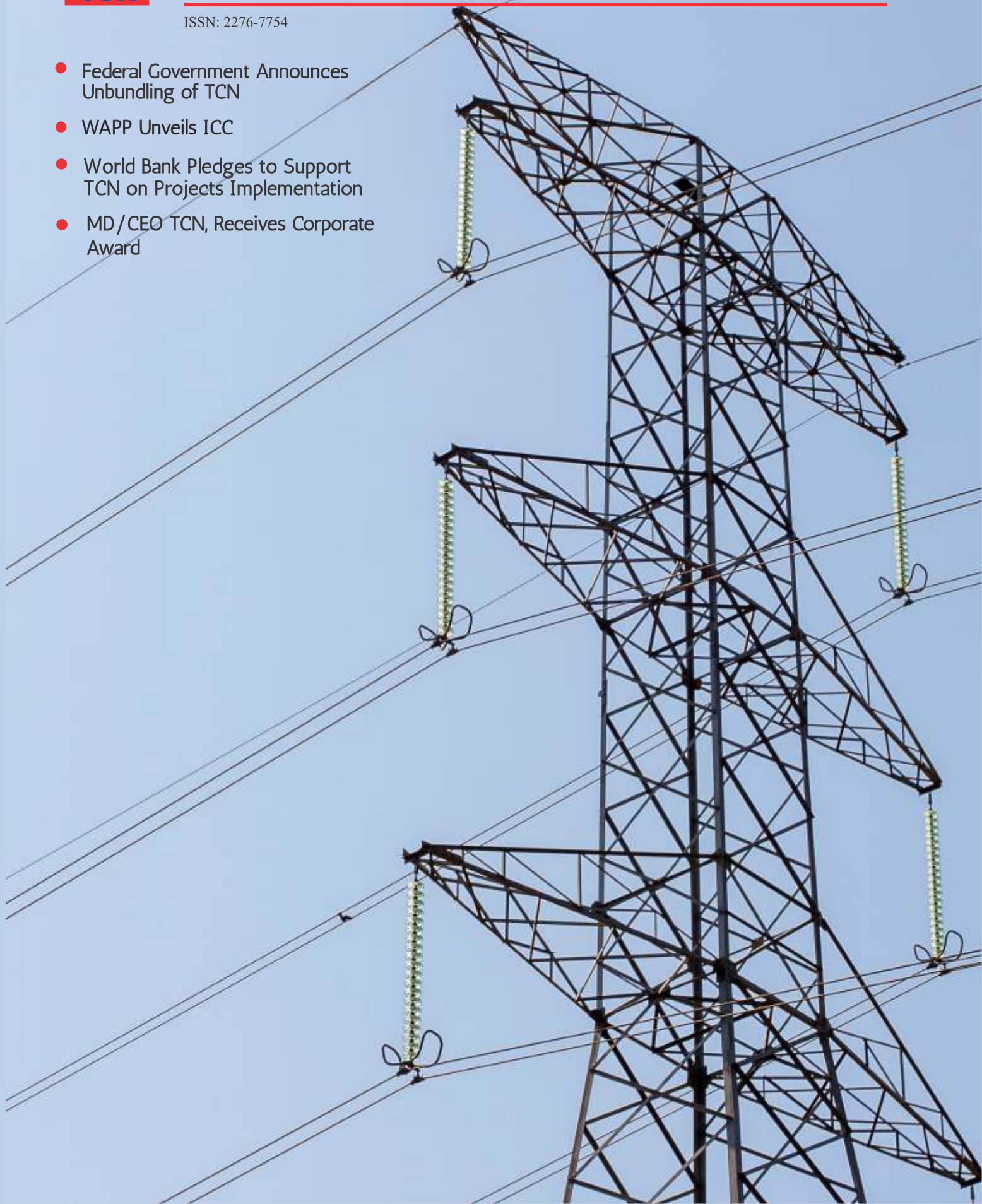
December 2023

# TCN Transmission News

IN-HOUSE JOURNAL OF TRANSMISSION COMPANY OF NIGERIA

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- Federal Government Announces Unbundling of TCN
- WAPP Unveils ICC
- World Bank Pledges to Support TCN on Projects Implementation
- MD/CEO TCN, Receives Corporate Award



## EDITIONS OF TCN TRANSMISSION NEWS PUBLISHED IN 2023



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# CONTENTS

December 2023 / ISSUE 40

06



09



15



05

FG Announces  
Unbundling of TCN

06

World Bank Pledges to  
Support TCN on Projects  
Implementation

07

WAPP Unveils ICC

09

MD/CEO TCN Receives  
Corporate Award from NIProcE

14

Electricity Act 2023: A  
Paradigm Shift in Market  
Regulations

15

Defence Intelligence College  
Seeks to Train TCN Staff

16

MD/CEO Urges Vigilance  
Against Corruption

22

TCN Set to Inaugurate Two  
Regional Control Centres

17



22



## EDITOR'S NOTE

### TCN: Powering Progress into 2024 and Beyond"

Undarguably, the year 2023 has been an epochal one for Nigeria and for us in the Nigeria Electricity Supply Industry, NESI. With the coming of the new administration, came the new Electricity Act, which stakeholders in the sector have described as a potential game changer in efforts to attract more investments into the power sector and ultimately, tackle the age-long challenges militating against power supply in the country.

To achieve this, there were a lot of changes in terms of the responsibilities of players in NESI as spelt out in the new Act.

As you will read in this edition of the magazine, in the last few months, TCN and other stakeholders have been busy at various fora trying to work out how best to take advantage of the Act to improve its assigned responsibilities as the backbone of power supply in Nigeria.

For us at TCN, the year 2023 has been marked by remarkable and landmark achievements as we continue the steadfast pursuits of our well laid out plan to strengthen the nation's power infrastructure with delivery of key transformers, lines and other projects across the country in collaboration with our partners.

In this last edition of our quarterly magazine, we showcase the strides TCN has made in enhancing power transmission, fostering employee excellence, and embracing cutting-edge technologies in the last quarter of 2023.

These endeavours underscore our dedication to fortify Nigeria's power grid, ensuring reliability and efficiency in the transmission of bulk power.

We also recognize that our most valuable asset are our people. We are delighted to note that the management, in collaboration with the various unions, were able to maintain industrial peace in the company throughout the year. This collaboration and above all, giving a listening ear to the in-house unions by the management have been instrumental in creating an environment conducive for the growth

and successes achieved by the company in the year.

As we continue to harness new technologies such as the ongoing implementation of the Supervisory Control and Data Acquisition (SCADA), we are confident of a more responsive and adaptive power grid.

Every transmission network demands meticulous maintenance. In the outgoing year, TCN also diligently undertook scheduled maintenance of transformers and all transmission equipment. This proactive approach ensures heightened efficiency, reduces downtime, and strengthens the resilience of the entire power transmission system.

Looking ahead, TCN is resolute in its determination to take the company many steps further in 2024. Our vision of becoming one of the leading electricity transmission companies in the world is still very much on course. This commitment aligns with our ongoing efforts to provide a reliable and stable bulk power supply to distribution load centers nationwide to drive economic growth of all Nigerians.

As we close 2023 and usher in a new year, TCN remains steadfast in its determination to deliver on this mission.

The stories you will read in this edition of the magazine capture the achievements of the company in the various areas listed above.

On this note, let me on behalf of the TCN Transmission News team wish all our readers a very happy Christmas and New Year celebrations.



Editor-in-Chief  
Ndid Mbah

#### VISION

To be one of the leading electricity transmission companies in the world

#### CORE VALUES

- Integrity
- Transparency
- Sustainability
- Professionalism
- Customer Focus
- Teamwork
- Safety

#### MISSION

To transmit electricity in a most efficient and effective manner

# Federal Government Announces Unbundling of TCN

By Eric Ene



Minister of Power, Chief Adebayo Adelabu

In a move aimed at aligning with the changing landscape of the sector with the new Electricity Act, the Federal Government has revealed plans to unbundle the Transmission Company of Nigeria (TCN) into two distinct entities: Transmission Service Provider (TSP) and Independent System Operator (ISO).

The Honourable Minister of Power, Chief Adebayo Adelabu gave this indication while addressing participants at the Federal Ministry of Power Ministerial Retreat themed "The Integrated National Electricity Policy and Strategic Implementation Plan, Navigating and Aligning on the Path to Enhanced Electricity Reliability" held on Tuesday, 12<sup>th</sup> December 2023, in Abuja.

Chief Adelabu emphasized that this decision was in line with the new Electricity Act of 2023 and responds to the industry's evolving demands. He articulated, "It's time to restructure the Transmission Company of Nigeria (TCN) into two entities: the Independent System Operator (ISO) and the Transmission Service Provider (TSP). This restructuring must synchronize with the evolving landscape of State Electricity Markets, addressing calls for the decentralization of the national grid into regional grids interconnected by a new higher voltage national or super-grid."

Addressing the policy focus of the ministry, Chief Adelabu highlighted the mandate of the Ministry to formulate an Integrated National Electricity Policy and Strategic Implementation Plan (INEP-SIP) as stipulated by the Electricity Act of 2023. He stressed the need for a departure from the outdated National Electric Power Policy of 2001.

The Minister elucidated that the Ministerial Retreat marked the commencement of a three-stage stakeholder engagement process to formulate the INEP-SIP, ultimately intended for presentation and approval by the Federal Executive Council (FEC).

In a goodwill message, the Minister of Finance and Coordinating Minister of Economy, Mr. Wale Edun, commended the Minister of Power for initiating the Integrated Electricity Policy and Strategic Implementation Plan. He emphasized the critical role of electricity in economic and social development, highlighting the imperative of expanding access to electricity for a substantial part of the population.

Further contributions from the Minister of Budget and Economic Planning, Mr. Abubakar Bagudu, underscored the commitment to delivering investment in power as outlined in Agenda 2050 for



Nigeria. He emphasized the significance of the National Integrated Infrastructure Master Plan in revolutionizing the power sector.

Meanwhile, the Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Ahmed Abdulaziz, presented the achievements of TCN in expanding and stabilizing the national grid for enhanced bulk power delivery. Notable accomplishments include the successful implementation of various transmission infrastructure projects across the country, resulting in increased reliability and improved power quality.

According to him, "In improving Grid stability and power quality, TCN has also implemented Frequency and Control and Load balancing, Grid Automation through Supervisory Control and Data Acquisition (SCADA), that will enable real-time monitoring and control of the power grid".

The three-day retreat featured insightful discussions and breakout sessions by industry players and stakeholders on critical topics such as Electricity Market Design, National Wholesale Electricity Market, State Electricity Markets, Governance, Adherence to Rules/Contracts and Finance, Risk-Mitigated Domestic Gas-to-Power Market, TSP, ISO, Regional



MD/CEO TCN, Engr. Dr. Sule Ahmed Abdulaziz

Grids, Super Grid, True and Effective Energy Transition for Nigeria, Human Resource Development for the NESI, Finance, Revenue Assurance, and Capital Investment Programmes across the Electricity Value Chain.



Cross section of participants at the Retreat in Abuja

# World Bank Pledges to Support TCN on Projects Implementation for Enhanced Grid Stability

By Eric Ephraim Ene

The World Bank, as one of the primary donor agencies supporting the Project Implementation Unit (PIU) within Nigeria's Transmission Company (TCN), has pledged substantial assistance for the implementation of critical transmission projects across the country.



Group photograph of TCN management and World Bank team

stating that it would enable TCN to become a flag bearer of system security and reliability, minimizing the possibility of future outages in Nigeria.

Furthermore, Mr. Khanne stated that the World Bank envisions TCN becoming one of the best transmission companies

globally, with a focus on utilizing digital solutions to improve efficiency. This approach aligns with the anticipation of the government and stakeholders potentially expanding TCN's role in the future.

Particular emphasis is placed on improving grid reliability through the implementation of the Supervisory Control and Data Acquisition System (SCADA). This commitment was conveyed during a recent courtesy visit to TCN's Management in Abuja by Mr. Ashish Khanne, the World Bank Country Director for Nigeria and Central Africa.

During the visit, Mr. Khanne commended TCN for successfully completing the Nigeria Electricity Transmission Project (NETAP), a World Bank-funded initiative, in the previous year. He expressed the World Bank's commitment to closely collaborate with TCN to strengthen the national grid. Notably, Mr. Khanne revealed that the Bank's Board had approved a substantial financial component in June 2023 for development partners involved in project implementation in Nigeria, a portion which would benefit TCN.

In line with this support, Mr. Khanne emphasized the World Bank's vision of transforming TCN into a global leader in transmission. The strategy involves leveraging digitalization to streamline system processes, enhance contract management, and prepare for potential expansions in TCN's role in the future. He specifically highlighted the importance of the SCADA implementation,

The Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Ahmed Abdulaziz, welcomed the World Bank delegation and outlined specific areas where the bank's assistance was sought. These include the implementation of SCADA, the execution of the 2nd National Control Centre (NCC), and addressing abandoned 330/132kV transmission lines and substation projects across the country. Engr. Abdulaziz also emphasized the critical need for a functional SCADA system in ensuring the security and stability of the national grid.

The visit also featured a presentation by the World Bank Group on Global Trends Affecting Transmission Utilities. This presentation covered various aspects, including access to financial markets, technology improvements, legal and regulatory changes, and institutional strengthening. Overall, the visit highlighted the collaborative efforts between TCN and the World Bank in advancing Nigeria's power sector and ensuring the reliability of the national grid.



A tropical sunset scene with palm trees and a body of water. The sky is a mix of deep blue, teal, and orange, with scattered clouds. The water in the foreground is calm, reflecting the colors of the sky. On the left, the silhouettes of palm trees and a small hut are visible. In the distance, a pier or dock extends into the water.

# Quotes

*The biggest communication problem  
is that we do not listen to  
**UNDERSTAND.**  
We listen to **REPLY***

-Anonymous



# Empowering the Future:

## WAPP Unveils the International Coordination Center, a Beacon for Regional Energy Integration

By Ndidi Mbah



In a significant stride towards regional energy integration, the West African Power Pool (WAPP) recently unveiled its International Coordination Centre (ICC). The inauguration of the ICC marks a pivotal moment in WAPP's pursuit of its objectives of providing a central hub for both the Regional Electricity Market and the synchronization of electricity networks across 13 West African countries.

The inauguration took place at the International Conference Centre (ICC) Abomey - Calavi, the Republic of Benin on the 17<sup>th</sup> of November, 2023.

Speaking at the event, His Excellency Mr. Patrice TALON the President of the Republic of Benin, represented by the Minister of State, responsible for Development and Coordination of Government Activity, noted that West African sub-region energy landscape is marked by low electricity access, high costs, and significant deficits in availability, thus hindering economic development of the region.

The Minister noted that reliable and affordable energy is indispensable for any country's progress and highlighted the necessity of the WAPP regional energy integration, emphasizing that no individual country can adequately address increasing demand for electricity. He called for unity, pooling of forces and resources as the sustainable solution to collectively overcome the energy difficulties faced by the sub-region.

He urged fellow Energy Ministers to spare no effort in ensuring the proper functioning of the market, while emphasising that the market represents the long-term solution to the energy

challenges confronting the West African sub-region.

In his address, Mr. Sédiko DOUKA, ECOWAS Commissioner for Infrastructure and Mines, highlighted ECOWAS' dedication to member states development, with focus on key achievements in 2023. These includes the establishment of a robust legal and regulatory framework, featuring the adoption of the updated ECOWAS Energy Policy.

According to him, another significant stride was the adoption of the ECOWAS Electricity Code, which establishes common principles for the electricity subsector, contributing to the harmonization of the legal, institutional, and regulatory landscape within the ECOWAS area. He also cited the introduction of the ECOWAS Green Hydrogen Policy and Strategy Framework.

Mr. DOUKA emphasized the vital role of these frameworks as tools for implementing activities within the region's electricity companies and ECOWAS specialized institutions. He also praised the collaboration between WAPP institutions and ECOWAS.

The Chairman of the WAPP, and MD/CEO, TCN, Engr. Dr. Sule A. Abdulaziz commended the WAPP's technical and financial partners, saying that the ICC could not have been accomplished without their support and confidence in the project. He expressed the confidence that with the existing understanding and collaboration more feats will be achieved and indeed vision of affordable, reliable and improved accessibility to electricity for the people of ECOWAS will be realized and sustained.

He equally thanked the European Union for believing in the project and for their support throughout the process despite the enormous challenges encountered.

The Chairman disclosed that the WAPP membership has grown to 44 stakeholders from the initial 19 in 2006, noting that the continuous backing, trust and financial contribution of members have indeed been of tremendous support towards the realization of the Pools' goal.



Newly inaugurated ICC complex

He reassured the WAPP Partners of the readiness of the Pool to reinforce collaboration and work more closely with them in the pursuit and realization of the next phase of the project.

Earlier in his welcome address, the WAPP Secretary General, M. Ki Seingui, emphasized WAPP's commitment to integrating national electricity networks into a unified system and establishing a Regional Electricity Market to provide reliable electricity at optimal costs.

He informed that the ICC complex which covers 5,000 m<sup>2</sup> on a 3.75-hectare plot, was built with a 30 million euro grant from the European Union.

Sengui Ki noted that WAPP has accomplished key milestones over its 25 years existence, including constructing 5,748 km of high-voltage lines, of about 2,414 MW capacity, predominantly from hydropower (83%), gas (10%), and solar (7%), costing a total of US\$8,389 million. Ongoing projects, he said, include a 2,763 km of high-voltage lines of 2,455 MW capacity.

Regarding the synchronization of electricity networks, Seingui

highlighted that, since July 8, 2023, 13 countries have been synchronised into a unified network and is now focusing on synchronizing the last network island, which includes Nigeria, Niger, and parts of Benin and Togo, to be completed next year.

With the operational Electricity Market Information and Coordination Centre, Seingui emphasized the new challenges of ensuring the Market's effective role as an electricity exchange in West Africa. This he said, will mark a transformative phase in WAPP's journey towards regional energy integration.

The ECOWAS Regional Electricity Market was designed to be implemented in 3 phases; the first phase consisting solely of bilateral transactions between electricity companies was launched on June 28, 2018 in Cotonou. The 2nd phase of the Market will be launched next year. This Phase, which will introduce a Competitive Market, require the construction of the Center for Information and Coordination (CIC) and its associated equipment.

The 3rd phase, which will have to introduce more competition and other financial and technical instruments, is envisaged to be launched within 3 to 5 years at the latest.



Group photograph of some participants at the inauguration of ICC

# MD/CEO TCN Receives Corporate Award from NIProcE

By Grace Sambe – Jauro



R-L; Chairman of NIProcE, Engr. Nwauzor I. Chuks presenting the award to MD/CEO TCN, Engr. Dr. Sule Abdulaziz



Group photograph of participants at the summit

The Managing Director /CEO of the Transmission Company of Nigeria (TCN), Engr. Dr. Sule Ahmed Abdulaziz has received a corporate award from the Nigerian Institution of Procurement Engineers (NIProcE). The award recognizes Engr. Abdulaziz's remarkable contributions to the advancement of the procurement profession in Nigeria.

The award presentation took place at the 3rd National Procurement Summit on Monday, 27<sup>th</sup> November 2023, at the TCN-CHQ in Abuja. The Chairman of NIProcE, Engr. Nwauzor I. Chuks FNSE, FNIProcE, who made the presentation of the award, lauded Engr. Abdulaziz for his unwavering commitment to shaping and revolutionizing procurement practices in the nation. The Chairman, further highlighted Abdulaziz's role in overcoming challenges, fostering collaborations, and contributing significantly to the development of procurement provisions in Nigeria leading to remarkable advancement in the field.

In his address, the TCN boss expressed gratitude for the honour and acknowledged the collective efforts that have led to the evolution of procurement practices in Nigeria. He

emphasized the transformative power of effective procurement, extending beyond mere transactions to encompass the building of sustainable relationships, positive renovations, and driving positive change.

***The Chairman of NIProcE, Engr. Nwauzor I. Chuks FNSE, FNIProcE, who made the presentation of the award, lauded Engr. Abdulaziz for his unwavering commitment to shaping and revolutionizing procurement practices in the nation. The Chairman, further highlighted Abdulaziz's role in overcoming challenges, fostering collaborations, and contributing significantly to the development of procurement provisions in Nigeria leading to remarkable advancement in the field.***

He further called on fellow professionals to recognize the responsibility of contributing not only to their organizations' immediate needs but also to the broader development of the nation adding that, collaborations, ethical practices and embracing technical enhancement are key pillars that will protect the procurement practices into the picture where procurement will continue to be a catalyst for progress.

During the event, TCN's General Manager Procurement, Engr. Abubakar A. Gwadabe was also conferred with a Fellowship from the institution. The summit witnessed participation by prominent figures in the procurement engineering field, including a paper presentation on "Recurring Issues in Construction Contracts" and various other engaging activities.



# NTA to Support TCN in Public Sensitization Against Vandalism

By Jemimah Dami



Cross section of NTA and TCN Bauchi Regional team at the meeting in Bauchi

The Management of Nigerian Television Authority, (NTA) paid a courtesy visit to Bauchi Regional Office of TCN, to strengthen ties and further explore ways of supporting the company in public sensitization against vandalism of its installations and encroachment of Right of Way, recently in Bauchi.

Speaking during the visit, the Regional Transmission Manager (RTM), Bauchi, Engr. Tijjani Ahmadu, harped on the dangers of vandalism and solicited the assistance of NTA in disseminating information against the act. He also spoke on the numerous ongoing substations and transformer projects in Bauchi Region, noting that in spite of the challenge of vandalism and insurgency, TCN would continue to forge ahead in its quest to build a robust transmission grid.

While pledging NTA's support in disseminating information, the General Manager of NTA, Mrs. Fati Isah, commended TCN's project implementation drive, adding that the projects were developmental projects which would positively impact the lives of the people.

She also emphasized the importance of collaboration to address challenges like vandalism, and noted her delight in the upgrade of transformer capacity in Bauchi Regional substation.

The NTA team were taken on a tour of the substation by the Regional Operations Manager, Engr. Abba Abdullahi.



Group photograph of NTA team and TCN Bauchi Region during the inspection tour at Bauchi Transmission Substation

# TCN/World Bank Hold Workshop on Environment & Social Safeguard Implementation in Kano

By Adam Umar



Presentation by one of the facilitators at the workshop

The Transmission Company of Nigeria, TCN in collaboration with the World Bank recently organized a workshop on Environmental and Social Safeguard implementation at the Kano Regional office of the company.

The workshop was designed to enhance awareness about the Health, Safety, and Environmental department of the company on its roles, functions, and responsibilities to ensure safety in

operational practices.

While encouraging every employee to take responsibility of following appropriate safety procedures, emphasis were placed on training, use of protective equipment, as well as adherence to safety rules, regulations, standards, and laws by resource persons in lectures delivered to participants at the workshop.

Recall that when the World Bank provides financing to the government for projects such as electricity, construction, and wastewater treatment, it also incorporates measures to ensure the protection of people and the environment from their potential adverse impacts. This is achieved through policies that identify, avoid, and minimize harm to people and the environment.

These policies require the government to address specific environmental and social risks by incorporating environmental and social considerations into policy design and implementation. This was the essence of the Environmental safeguard training.



Group photograph of participants at the workshop in Kano

## IPECON Holds 16<sup>th</sup> Edition in Edo State

By Chigozie Clement

The power sector is key in driving economic growth, improving livelihoods, and enhancing the overall quality of life for communities globally, the Managing Director of TCN, Engr. Dr. Sule. A. Abdulaziz, has noted.

Engr. Abdulaziz, stated this at the 3-Day exhibition/workshop of the International Power Engineering Exhibition and Conference (IPECON), held recently at Benin, Edo State, under the theme: "The Electric Power Sector Reform: Practice, Market, and Political Nexus".

The MD, who was represented by the Regional Transmission Manager, (RTM), Benin, Engr. I.C. Okpe, acknowledged that innovative approaches and cutting-edge technologies are essential to overcome the challenges faced by the power sector. The practice of power engineering he noted, plays a crucial role in transforming concepts into tangible solutions.

He highlighted the vital role of engineers in shaping the future of the power sector. Their responsibilities, according to him includes optimizing generation and transmission systems, integrating renewable energy sources, and enhancing grid reliability and resilience.

Abdulaziz emphasized that the reform efforts should consider the complex ecosystem of the power sector, taking into account supply and demand forces, regulatory frameworks, investment patterns, and consumer behaviour. By building a reform strategy around these factors, he explained, an environment can be created that fosters healthy competition, attracts positive investors, encourages innovation, and ensures affordable and reliable electricity for all.

Continuing, he highlighted the significant losses incurred by the company and the country due to sabotage by vandals, even as he urged participants to help protect and watch over all federal government facilities. The MD/CEO added that vandalism hampers the development of the country and called for collective effort to combat the problem.

While calling on stakeholders in the electricity sector to collaborate and work together to overcome the challenges in the power sector, he emphasised the importance of collaboration, knowledge sharing and ideas, towards building a sustainable, resilient, and inclusive power sector.



Participants at the conference



# NIGELEC, Kano Region Enhance Collaboration

By Suleiman Hassan

The General Manager of the Kano Region of the Transmission Company of Nigeria (TCN), Engr. Bashir Mohammed-Gote, recently welcomed a delegation from NIGELEC, the electric power generation and transmission utility agency of Niger Republic, to its office. The delegation from Niger Republic was in Kano to seek ways of further

transmission line II to line I at the Katsina Transmission Substation, to further enhance electricity supply to Niger Republic.

Engr. Gote highlighted that TCN had already addressed more than 75% of the concerns raised during a previous meeting



Group photograph of TCN and NIGELEC team

enhancing existing collaboration between the two organizations.

During the meeting, Engr. Mohammed-Gote expressed his appreciation to the NIGELEC Management for the continued cordial relations and partnership between TCN and NIGELEC.

He noted that the 150MVA T4 power transformer situated at the Kano-Katsina 132kV line II has been designated to exclusively serve NIGELEC in Gazaoua, Niger Republic.

Engr. Mohammed-Gote reassured NIGELEC of TCN's commitment to resolving any challenges that could lead to improvement in service delivery across the transmission network. He pledged to replace the faulty T4A-150MVA power transformer's Tap changer mechanism at the Kumbotso Transmission Station, which powers parts of Niger, and explained that TCN is planning to shift all loads from

with the NIGELEC team earlier in the year in Kano.

Elhadj Haasan Ashore, representing NIGELEC, conveyed gratitude to the TCN Management and proposed the establishment of a dedicated transmission line to provide power to Gazaoua in Niger Republic.

He stressed the significance of effective communication between Nigeria and Niger, emphasizing ongoing efforts to strengthen this aspect through contracts aimed at enhancing cross-border communication, which he informed the meeting, had already been awarded.

The courtesy visit underscored the commitment of both TCN and NIGELEC towards fostering a stronger partnership aimed at improving electricity supply as well as enhancing cooperation between the two neighbouring nations.

# Electricity Act 2023: A Paradigm Shift in Market Regulations

By Bili Kazah

The Electricity Act 2023, signed into law by President Bola Ahmed Tinubu's administration in 2023, is a game-changer for the Nigerian Electricity Supply Industry (NESI). It aims at improving efficiency, transparency, and accountability in the power sector; it enables states to participate in the generation, transmission and distribution of electricity as well as promote the use of renewable energy sources among others.

However, this new legislation also entails significant changes in the market rules and procedures that govern the industry's operations. To address this issue, the Rules Working Group (RWG) in its quarterly meeting in Calabar, Cross Rivers State, on the 23<sup>rd</sup> October, 2023 reviewed the implications and opportunities of the Act for the NESI, states and investors.

Speaking at the meeting, the RWG Chairman, Mr. Ali Bukar Ahmad, who is also the General Manager of Regulation and Compliance at the Transmission Company of Nigeria, TCN, gave an overview of the Act and its implication on the market dynamics. He said that the Act has fundamentally reshaped the market regulations and there is a need for a comprehensive review of the existing market rules and market procedures to align them with the legislative requirements and the best practices in the industry in line with the provision of the Act.

He also highlighted some of the challenges and opportunities that arise from the Act, such as separating ISO from TCN, consolidating all related Acts into one, integrating renewable energy sources, and engaging with stakeholders. He emphasized the importance of effective communication and collaboration among all market participants to foster a resilient and sustainable market development.

One of the main challenges that Mr. Ahmad pointed out about the Act was the integration of various renewable energy sources into the existing infrastructure. He said the challenge was not only a technical issue, but also a practical one, as there were many complexities beyond the Act's provisions. He underscored the need for heightened stakeholder engagement and said that the RWG was committed to providing effective communication channels for dissemination of crucial information across the industry.

Engr. Prof. Stephen Ogaji, who is the Vice Chairman of the RWG,



Participants at the workshop in Calabar

also spoke at the workshop. He focused on the role of market flexibility and regulatory standards in ensuring a smooth transition to the new market regime. He said that the RWG was working closely with other governance structures in NESI such as ISAP, to address any potential conflicts or gaps in the market rules and market procedures.

Prof. Ogaji stressed the need for sustained dialogue and collaboration with regulatory bodies to resolve any issues that may arise.

The workshop also received a courtesy visit from Prince Eka Williams, the Commissioner for Power and Renewable Energy in Cross Rivers State. He commended the RWG for its efforts and expressed his appreciation for the decision to hold the event in Calabar.

He said that Cross Rivers State was eager to partner with power stakeholders to improve power supply and achieve its renewable energy goals. He underscored the necessity for a unified and impartial approach to addressing the challenges in the power sector and advocated for transparent communication to identify and resolve critical bottlenecks hindering efficient power distribution.

The workshop featured presentations on various topics related to the Electricity Act 2023 and its impact on market rules and procedures. The opportunities, weaknesses and constraints as well as impact of the Act on the existing Market Rules and Regulation among others.

# Defence Intelligence College Seeks to Train TCN Staff

By Eric Ephraim Ene

The Commandant of Defence Intelligence College, Rear Admiral Julius Nwagu, has expressed the institution's interest in collaborating with the Transmission Company of Nigeria (TCN) to provide training for its staff in the security and protection of vital transmission infrastructure across the country.

Rear Admiral Nwagu conveyed this intent when he led a team from the College on a courtesy visit to the Management of TCN on Tuesday, 21<sup>st</sup> November 2023, in Abuja. He noted that the mandate of Defence Intelligence College include collaborating with relevant government agencies to train their staff in security matters.

He emphasized that given its strategic role in managing the nation's Grid system, government agencies like TCN, are crucial partners of the College. Rear Admiral Nwagu stressed the necessity of conducting thorough investigations into incidents of system collapse to determine if they result from internal sabotage.

Speaking on the capacity of the College, Admiral Nwagu explained that the College was well equipped and ready to train TCN staff on document security, counter terrorism, espionage, saboteur, with the ultimate aim of making them understand the

essence of protecting critical transmission infrastructure.

The Commandant used the occasion to commend the TCN for sustaining the grid despite numerous challenges within the system.

Responding, the Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule A. Abdulaziz assured the team of TCN's willingness to collaborate with the College for the training of staff to stem the tide of vandalism of transmission infrastructure.

Engr. Abdulaziz stated that TCN needs support from the government to protect its critical infrastructure across the country. "TCN needs support from the government and security agents to be able to guard its infrastructures. TCN is ready to work with you and we have the Human Resources Department who will work out the training modalities with you," he said.

In his comment, the Executive Director, Human Resources and Corporate Services, Barr. Justin Dodo, noted that the proposal from the Defence Intelligence College was a good opportunity to train TCN staff on relevant areas of securing transmission installations and urged the College team to send in their proposal.



Group photograph of TCN and Defence Intelligence College team after the meeting in Abuja



# Abdulaziz Urges Vigilance Against Corruption in TCN

By Grace Sambe-Jauro



R-L; Chairman of ACTU TCN, Mr. Ochije.O. Chuks, ED, Finance and Accounts, Mr. Isah Ahmad Dutse, ED, HR & CS, Barr. Justin Dodo, flanked by ICPC officials

In a compelling call to action, the Managing Director /CEO of the Transmission Company of Nigeria (TCN), Engr. Dr. Sule Ahmed Abdulaziz has urged the company's staff to fight against corruption within their professional duties.

Represented by the Executive Director, Human Resources & Corporate Services, Barr. Justin Dodo, Engr. Abdulaziz conveyed this message during the Anti-Corruption and Transparency Unit (ACTU) Awareness Campaign and the launch of the Corruption Preventive Guide Handbook on Thursday, November 23, 2023, at the TCN CHQ auditorium in Abuja.

Emphasizing the handbook's pivotal role in the ongoing fight against corruption, he underscored the importance of proactive prevention over reactive measures and encouraged all staff to actively engage with the guide, internalize its content, and apply its principles in their daily activities. He stated, "Rather than reacting to corruption after it occurs, the emphasis in the guide is on prevention. I, therefore, urge all staff to

actively engage with this guide, internalize its content, and apply its principles in their daily activities."

Abdulaziz, highlighted that corruption poses not only a financial threat but also jeopardizes work ethics, colleague relationships, and the careful handling of company assets, including documentation. He also stressed that corruption undermines TCN's core mandate of efficient delivery of bulk power supply.

In his opening remarks, the Chairman of ACTU TCN, Mr. Ochije.O. Chuks, underscored the crucial role of the ACTU awareness program in fostering a culture of transparency, accountability, and ethical conduct within TCN. He revealed that the Independent Corrupt Practices and Other Related Offences Commission (ICPC) had commissioned the establishment of ACTUs in over 445 MDAs to combat corruption.

Mr. Chuks outlined the objectives of the ACTU awareness program, including promoting transparency, educating staff,

*...He highlighted accomplishments from the past year, such as inaugurating ACTUs in all TCN Regional offices, providing whistle-blowing boxes for staff to report, petition, and suggest anti-corruption cases, and developing a concise handbook to guide TCN staff in mitigating corrupt practices.*

instilling ethical conduct, identifying corruption vulnerabilities, encouraging reporting, and showcasing success stories. He highlighted accomplishments from the past year, such as inaugurating ACTUs in all TCN Regional offices, providing whistle-blowing boxes for staff to report, petition, and suggest anti-corruption cases, and developing a concise handbook to guide TCN staff in mitigating corrupt practices.

Acknowledging the challenges faced by the unit, such as the need for capacity building, retreats, workshops, and training, Mr. Chuks called for collective efforts among staff to join the transformative journey.

Officials from ICPC, present at the event, delivered a detailed presentation on how corruption undermines public offices and hampers national growth. They urged members of TCN ACTU to persevere in their fight against corruption, encouraging staff cooperation.

The highlight of the program was the launch of the TCN Anti-Corruption handbook by the Managing Director's representative



Standing: Chairman of ACTU TCN, Mr. Ochije O. Chuks, delivering his welcome address

and the Executive Director Finance and Accounts, Mr. Isah Ahmad Dutse.

In attendance were TCN Management and staff at the corporate headquarters and Abuja Regional Office.



Launch of the TCN Anti-Corruption handbook at the Corporate Headquarters, Abuja



## Inaugurated ACTU Members in TCN Regional Offices



Members of ACTU Unit in CHQ, Abuja



Members of ACTU Unit in Abuja Region



Members of ACTU Unit in Benin Region



Members of ACTU Unit in Osogbo Region



Members of ACTU Unit in Enugu Region



Members of ACTU Unit in Lagos Region



Members of ACTU Unit in Bauchi Region



Members of ACTU Unit in Kaduna Region



Members of ACTU Unit in Kano Region



Members of ACTU Unit in Port Harcourt Region



# TCN Establishes Working Group to Facilitate Implementation of SCADA Project

By Latifat Haruna

In alignment with the ever-evolving technological landscape, the Transmission Company of Nigeria (TCN) has taken proactive steps towards the acquisition and implementation of the Supervisory Control and Data Acquisition (SCADA) and Electricity Management System.

Recognizing the importance of mastering this innovative system, TCN has established a steering committee tasked with guiding various working groups involved in the realisation of SCADA project. This was announced during a meeting held recently at TCN's corporate headquarters in Abuja.

Speaking at the meeting, Engr. Dr. Sule Ahmed Abdulaziz, the Managing Director and Chief Executive Officer of TCN, expressed the company's unwavering commitment to enhancing the transmission network and, consequently, the national electricity grid. He acknowledged that the SCADA project has been a longstanding matter within TCN, with numerous past attempts to procure and install it. He however, remained optimistic that the current efforts would yield a successful outcome.

Furthermore, he highlighted TCN's obligation to adhere to the Nigerian Electricity Regulatory Commission's (NERC) requirement of providing feedback every two weeks on the progress being made on the project. Given this, the MD/CEO encouraged members of the working group to work collectively to bring the long-awaited SCADA to life, recognizing their selection as the best for the task.

In his contribution at the meeting, Engr. Mamman Lawal, Executive Director, Independent System Operations, TCN, described the event as historic, noting that the MD approved the formation of the steering committee.

Also, Engr. Nafisat Ali, General Manager of System Operations at TCN's corporate headquarters, urged all participants to demonstrate unwavering commitment toward attaining the steering committee's objectives.

Adding to the discussion, Engr. Billiaminu Ishola, the General Manager, National Control Centre, emphasized that the ongoing SCADA and Electricity Management System project entails the effective integration of substations and equipment

into the SCADA system. He added that the committee shoulders the significant responsibility of coordinating this complex process.

## SCADA UPDATE, THE JOURNEY SO FAR

SCADA comprises of equipment and software used for gathering Data in real-time from remote location to control equipment and conditions for effective Transmission of Electrical Power.

The Rehabilitation of SCADA Systems Project aims to implement full-scale state-of-the-art SCADA, EMS, and telecommunication systems to monitor and manage in a safe and reliable manner the relevant electrical network as well as monitor energy exchanges in the interconnected zones.

The Project, which is currently at 40% completion, has achieved the following milestones:

- i. Site Survey of 234No. Transmission Substations, 31No. Generating Stations and 2723km Transmission line routes where Optical Ground Wire (OPGW) Fibre Optics Cable would be installed.
- ii. 80% Completion of Engineering and design.
- iii. Manufacturing of 90% of the SCADA and Telecoms Equipment, mostly in China.
- iv. Offshore Training of over 100No. TCN engineers to transfer the requisite skills for the operation and maintenance of the manufactured equipment and systems at the manufacturers' site in China.
- v. Factory Acceptance Testing (FAT) for the manufactured equipment at the manufacturers' site in China.
- vi. The first batch of equipment comprising 700km of OPGW and Control Cables for the RTU adaptation works was shipped on September 4th, 2023. Subsequent shipments of other equipment will be made from early October to December 2023.
- vii. Installation activities will commence in October to

early November 2023 once the first shipment of equipment has been cleared from the ports and transported to the site.

#### Other SCADA -related Projects

Other SCADA -related projects being carried out by TCN PMU and funded by the World Bank under NETAP are as follows:

1. Consultancy for engineering supervision and site management of the Rehabilitation of Transmission SCADA Systems. The Consultancy was awarded to international Consultancy firm CESI SPA of Italy in September 2021. The Consultants assisted TCN PMU in the bidding phase and with their team of experts are currently supervising the SCADA Project.

2. Refurbishment and extension of the Regional Control Centre at Benin and Ikeja NTP- W2. These buildings are to house the new SCADA-EMS facility to be provided in the NTP -TR6C Project. The Project is currently at 85% - 90% completion.

3. Consultancy for the supervision of the Construction of the two National Control Centres (NCC) at Gwagwalada and

Osogbo and the Refurbishment/ extension of the Regional Control Centres at Benin and Ikeja West (NTP- CDS 01). The Consultancy was awarded to Abiss Consult Ltd, an architectural consulting firm that designed the buildings and is currently supervising the construction works.

4. Digitization of 26No. old Transmission Substations. The project is expected to upgrade the protection, control, and automation systems at the 26No. Transmission Substations to ensure that the substations are compatible with the operation of the new SCADA System to be provided under TR6C. The project is at about 40% completion.

The Rehabilitation of SCADA Project in the Transmission Network was awarded to Messrs NARI Technology Co. Ltd – NR Electric. Nig. Ltd. Consortium, both Chinese companies known for their ingenuity in automation systems in Power Utilities on August 25th, 2022, after a rigorous international bidding process. The World Bank under the Nigeria Electricity Transmission Project (NETAP) is financing the SCADA project. TCN's World Bank Project Management Unit. is managing the Project.



Participants at the workshop in Abuja

# TCN Inaugurates 150MVA and 100MVA Power Transformers in Enugu and Onitsha

By Mary Philip-Udom



Recently commissioned 150MVA, 330/132kV power transformer at New Haven, Enugu State

The Transmission Company of Nigeria (TCN) has successfully commissioned a 150MVA 330/132kV power transformer in New Haven, Enugu State, and a 100MVA transformer in Onitsha, Anambra State. These additional transformers translate to an increased capacity of 120MW and 80MW, respectively, thus, enhancing TCN's overall wheeling capacity.

Speaking at the inauguration ceremony for the 150MVA transformer in Enugu, presided over by Engr. Emmanuel Akpa, the General Manager of Enugu Region, emphasized the transformative impact of the new infrastructure for electricity consumers in Enugu. Engr. Akpa noted that besides adding 120MW to the existing substation load, the transformer addresses previous load limitations in the Enugu Sub-Region of EEDC.

With the commissioning of this new transformer, the total transformer capacity at the 330kV level in the substation now stands at 300MVA. The General Manager said that the additional capacity augmented for suppressed load will ensure a more consistent bulk supply to EEDC's feeders, allowing the company to offtake more power for distribution to customers.

Areas set to benefit from this upgraded capacity include Enugu Metropolis, Oji River, Nsukka in Enugu State, as well as Nkalagu and Abakaliki in Ebonyi State. Engr. Akpa expressed gratitude to the Managing Director/Chief Executive Officer of TCN and the entire management team for their unwavering commitment to the successful realization of this project.

In a parallel development, TCN also commissioned a 100MVA 132/33kV power transformer at Onitsha Sub-region on September 2, 2023. The Assistant General Manager (Transmission), Onitsha Sub-Region, Engr. Ifeanyi Okonkwo, spoke about the substantial impact of the new transformer, noting that it has added approximately 80 megawatts to the substation's capacity. This enhancement enables the Enugu Electricity Distribution

Company (EEDC) to offtake more electricity to its customers in Nkpor, Ogidi, and Umuoji.

The inauguration events were attended by the AGM(T) Enugu Sub-Region, Engr. Charles Iwuamadi, and Regional Operation Manager, Engr. Amos Ango, along with the dedicated staff from both Enugu and Onitsha sub-regions. These initiatives underscore TCN's commitment to advancing operational capabilities and ensuring a reliable power supply in the electricity sector.



The new 100MVA 132/33kV power transformer at Onitsha Sub-region



# TCN Set to Inaugurate Two Regional Control Centres

By Tosin Olasheinde & Abdulrahman Abdulbaqi



Soon-to-be commissioned Regional Control Center in Benin

The Transmission Company of Nigeria (TCN), is on the verge of commissioning state-of-the-art Regional Control Centres in Lagos and Benin Region, marking a significant milestone in the nation's power sector.

Speaking on the projects recently, the Regional Operations Manager of Independent System Operation (ISO), Lagos, Engr. Wasiu Adedeji Tijani, stated that the nearly completed control centers, aim to address increasing manpower needs for regional responsibilities in the electricity market. The new infrastructure also seeks to enhance SCADA capacity, providing improved Grid visibility beyond the 132kV level.

Engr. Tijani emphasized the Regional Control Centres role in overseeing operations dispatch and control within the region, highlighting TCN's engagement with stakeholders to keep them informed about the projects. He noted that having a Regional Control Center allows for quicker responses to emergencies or faults in the power grid as operators can quickly assess and address issues, minimizing downtime and improving overall grid reliability.

Engr Tijani further explained that since Regional Control Centers enable centralized monitoring and management of power grids within a specific geographic area. The facilities will lead to better coordination of resources and reduce the likelihood of overloads or disruptions.

Similarly, Engr. J.O. Joseph, the Regional Operations Manager (ROM) in Benin, revealed that the Benin Regional Control Center, a World Bank sponsored project, is almost completed and set for commissioning. A digital Mini Board in the control room will monitor grid operations in the 330/132kV transmission network, ensure operational compliance, and coordination at regional interfaces, which according to him, is vital in meeting grid requirements. He noted that by monitoring operations and adherence to specifications, the regional centers will contribute to maintaining a secure and reliable power supply.

According to Engr. Joseph, the upcoming commissioning is an indication of TCN's commitment to advancing operational capabilities in the electricity sector.



Regional Control Center, Lagos

# West African Grid Capacity Regional Control System

By Ndidi Mbah

## Introduction

The West African Power Pool (WAPP), was created in 1999 by Decision A/DEC. 5/12/99 and established in 2006 through Decisions A/DEC. 18/01/06 and Decision A/DEC. 20/01/06 by the Authority of ECOWAS Heads of State and Government.

The vision was, and still is to integrate the national power systems in the West African Sub-region into a unified regional electricity market with the ultimate goal of providing in the medium and long term, a regular and reliable energy at competitive cost to the citizenry of the ECOWAS region.

The vision is to promote and develop power generation and transmission infrastructures as well as coordinate power exchange among ECOWAS Member states.

As at today, WAPP has 13 out of 14 power systems of mainland ECOWAS countries interconnected. The only country not interconnected is Guinea Bissau. It is expected that the Côte d'Ivoire-Liberia-Sierra Leone-Guinea (CLSG) and Gambia River Basin Development Organization (OMVG) projects when completed by the end of the year or 1<sup>st</sup> quarter of 2024 will lead to the complete interconnection of all 14 mainland ECOWAS countries. Part of CLSG and OMVG projects have already been commissioned.

Until July 2023, WAPP has been operating as three separate synchronous blocks with Nigeria - Niger - Part of Togo/Benin being a single synchronous block whilst the two other blocks consist of the power systems of other countries. However, since 8th July 2023, WAPP successfully synchronized the other two blocks awaiting the synchronization with Nigeria - Niger - part of Togo/Benin.

With a fully synchronized and interconnected WAPP Power System possibly by end of 2024, there will be opportunity for power plants in Nigeria to export power to other parts of the WAPP Power System via the 330 kV Ikeja - Sakete line and the ongoing 330 kV North Core project.

As at June 2023, there were sixteen Transmission System Operators (16), eight PPA holders - Sellers (08), thirteen PPA holders - Buyers (13) and eight bilateral agreements.

## The Control Systems And Tools In The Regional Grid

The Information and Coordination Centre (ICC) is an organ of the WAPP General Secretariat in charge of operational coordination between the members who own and operate the transmission network as well as the electricity market management.

## Objectives of the ICC

To promote operational coordination between Transmission Owners or operators within WAPP Members and actual day-to-day information sharing/exchange between WAPP Operational Coordination Centre;

To facilitate efficient trading of power between entities in different countries that are interconnected in the region.

## Responsibilities of the ICC

Collect, analyse and disseminate the information needed to gauge the evolution of interconnected electricity generation and transmission systems in the region real time.

Monitor the development of the national electric power systems in ECOWAS Member States in order to forewarn the risks of performance deficiencies and to provide them with corrective measures.

Periodically analyse the economic and technical viability of cross-border electricity trading arrangements among transmission users in member states.

Develop and maintain electronic databases of relevant technical information as approved by the WAPP Executive Board.

## The Regional Electricity Supply Industry Documents

The Grid Code consists of the following documents as chapters;

**Connection Code:** the Code that aims at governing the technical conditions for the access of Generation Facilities and HVDC Systems to the Grids of the Member States. The aim is to promote the correct functioning and safety of the WAPP Power System.

**Market Code:** The Code that establishes the REM, governs an efficient, competitive, transparent and reliable market operations, and establishes and assigns the monitoring and surveillance functions in the ECOWAS Region.

**Metering Code:** The Code that outlines common principles, and specifies minimum technical and design requirements, as well as establishing the basic rules for accessing the meters, remotely collect the meter readings, and data collection for the Grid Operators and other actors in WAPP.

**Operation Code:** The Code that define and governs the rules for supervisory and controlling the Cross-border Interconnections in the ECOWAS Region.

**Planning Code:** The Code that defines and regulates the process for the Development Planning of the Cross-border Interconnections of the WAPP Power System.

**System Operators' Training Code:** The Code concerns the training elements that the Grid Operator's personnel operating the Power System shall receive, in order to properly interact with the complexity of the interconnected WAPP Power System.

#### The creation of the SMO

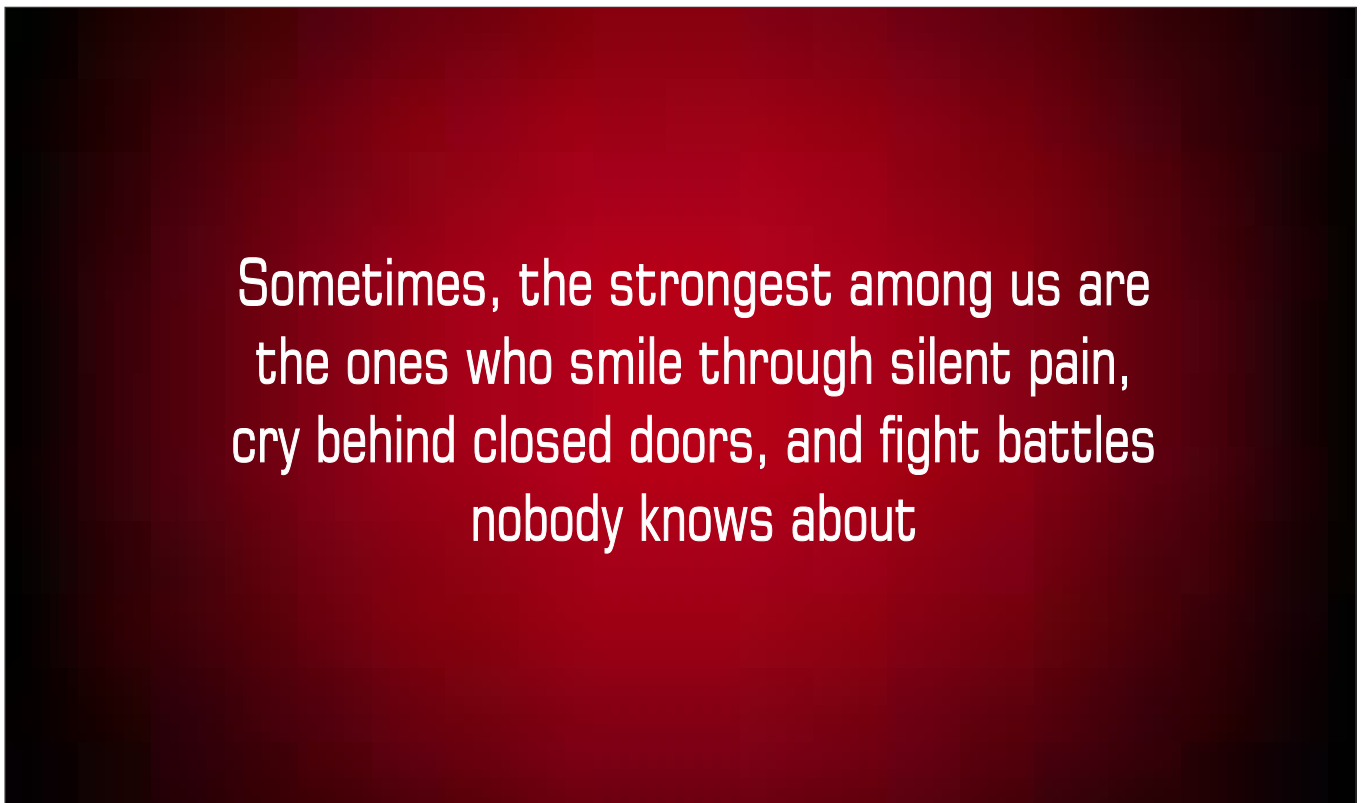
The SMO when created shall to provide and supervise both system and market operations in addition to drafting and implementing procedures.

Market Monitoring and surveillance procedures and organs are being developed and created respectively to provide control over the regional system.

Procurement of ancillary service is also planned for in the market.

The fourth dimension of energy supply industry, that is energy storage is missing in the management of the WAPP system and it is also one of the weaknesses in the new electricity act 2023, thus in the Nigerian Electricity Supply Industry, both Markets should make concerted efforts to provide and ensure that legislation on energy storage is provided, otherwise the emphasis on and importance of renewable energy in the energy mix will be diminished.

Finally, the technology of supervision and control in the ICC has been tested successfully in three out of the four control areas in WAPP. The bidding platform is currently operational and final test and training of participants are underway.



Sometimes, the strongest among us are  
the ones who smile through silent pain,  
cry behind closed doors, and fight battles  
nobody knows about



# Protect Power Infrastructures: TCN Seeks Inter-agency Collaboration

By Omideji Oluwakayode

**E**lectricity is a very important factor in the social and economic development of any nation, so, the need to secure critical power infrastructure cannot be overstated. In this vein, the TCN has continued to reach out to host communities and has also collaborated with security operatives to safeguard its vital assets towards ensuring a more stable and efficient power supply nationwide.

It is to this end that TCN recently, again urged various government agencies to join forces with it in the protection and management of vital power infrastructure across the nation. Engr. Biliaminu Ishola, the General Manager of the National Control Centre (NCC) in Osogbo, made this appeal during a recent visit to the Commissioner of Police in Osun State.

Engr. Ishola who led the TCN Osogbo team on the official visit to the Commissioner of Police in Osogbo, emphasized the pivotal role of the NCC in the bid to ensure reliable power supply in Nigeria. He noted the crucial responsibility of the Police in ensuring the security of all national assets, saying the visit of the TCN team was to further enhance the existing relationship between the Police and TCN.

Engr. Ishola praised the Police for their successful maintenance of peace in Osun State, and stressed the significance of their role in maintaining the security of the NCC and all power facilities.

In his response, the Commissioner of Police (CP), Mr. Faleye Olaleye acknowledged the positive relationship between the two government entities and assured that the Police were fully prepared to fulfil their duty of safeguarding the lives of citizens and their properties as well as all national assets. He explained that although the Nigerian Civil Defense Corps (NSCDC) is primarily responsible for directly monitoring national infrastructure's security, the police in the region will pay more attention to the safety of the NCC and all TCN facilities within Osogbo and Osun State in general.

Engr. I. B. Lasisi, the Assistant General Manager (SO); Mr. Shittu S.A, the Principal Manager (F / A) of NCC; and the Manager (HR) of NCC, Osogbo, were part of the TCN delegation that visited the Police Commissioner. The collaborative efforts between TCN and the Police in Osogbo underscore commitment to ensure protection and effective management of critical power infrastructure in the region.



TCN Management, Osogbo Region, in a group photograph with the Commissioner of Police, Osun State.

# Transmission Lines Projects Crucial for Building Robust National Grid – Engr. Bako

By Grace Sambe-Jauro

Engr. Rabi A Bako is the Assistant General Manager Lines Projects in the TCN Corporate Headquarters. He spoke with the Transmission News Crew on TCN lines projects, how they contribute to the overall grid performance, challenges encountered in executing lines projects, among others. Excerpts.

Transmission lines are a major part of the TCN equipment, indispensable in the transmission of bulk electricity from Generation Companies to Distribution Companies nationwide. Presently, TCN has about 8,937.59KM of 330kV lines nationwide and 7908.37KM of 132kV transmission lines.

Presently, TCN is undertaking massive reconstruction of mostly 132kV transmission lines nationwide, some of the 330kV are also being worked on but with emphasis on the 132kV level. The aim of the numerous transmission lines projects, completed and ongoing was to further enhance wheeling capacity to ensure greater power delivery to various distribution load centres nationwide. The effectiveness of these projects is evident in the working of the grid. The grid functions as an interconnected system, crucial for linking substations, power stations, and load centres. Without a robust network of transmission lines, such interconnections would be unattainable.

Transmission lines play a pivotal role, particularly because many power stations are situated in remote areas, while load centres are often located outside these regions. This geographical separation underscores the necessity of transmission lines, which facilitate the transport of power from remote areas to major load centres, including cities and villages.

Challenges are inherent not only in project execution in general but particularly in projects involving communities and villages. Transmission lines traverse numerous communities, each with its unique perspectives. Despite some expressing desire for power delivery directly through the transmission lines, we acknowledge the impracticality of such requests. However, we maintain positive relationships with these communities, recognizing them as friends and brothers, fostering unity to achieve the primary goal of executing transmission line projects.

During the execution of transmission line projects, strict adherence to safety regulations is ensured by following established specifications. These specifications, primarily designed for safety purposes, include safety clearance in the right of way, electrical clearances, and community safety considerations. Since transmission lines often avoid city centres for security and safety reasons, post-implementation safety assessments are conducted by the Nigerian Electricity Management Safety Agency (NEMSA). NEMSA scrutinizes and certifies safety aspects, providing a completion certificate for the executed projects.

This safety-oriented approach aligns with the standards set by the Nigerian Electricity Supply Industry (NESI), emphasizing the interconnection with NESI to ensure the well-being of the populace.

Implementing transmission line projects is a time-consuming endeavour, influenced by factors such as line length, environmental considerations, topography, and funding. The primary hurdle in transmission line implementation lies in securing the Right of Way (RoW), which often prolongs project timelines. While we strive for seamless execution of transmission line projects, the predominant challenge arises from RoW issues.

RoW challenges are primarily community-related, with some expressing reluctance for the lines to pass through their areas. Conversely, cooperative communities facilitate a smoother process. Delays occur when communities oppose the passage, necessitating diversions and adjustments to adhere to project timelines. Despite these challenges, our commitment remains to execute transmission line projects efficiently and on schedule.

Encountering significant obstacles is not a frequent occurrence, but when they arise, we engage with various stakeholders crucial

to the implementation process. Our key stakeholders typically include State Governors, Local government officials, and the communities. Interestingly, communities often prefer initial dealings with their village heads rather than directly with governors.

In navigating these challenges, our approach usually start with the village head, we then move gradually to higher authorities. Recognizing the community's preference for interaction through their village heads, we consistently follow this protocol. It's only in cases where direct engagement fails, that we escalate the matter to state and local government authorities for prompt mediation, ensuring a seamless resolution.

The implementation of transmission line projects involves overcoming various challenges, with a primary focus on securing the Right of Way (RoW). Factors such as project length, environmental considerations, topography, and funding contribute to the time-consuming nature of these endeavours. Community-related RoW issues, where some oppose the passage of lines through their areas, often lead to delays, necessitating diversions and adjustments.

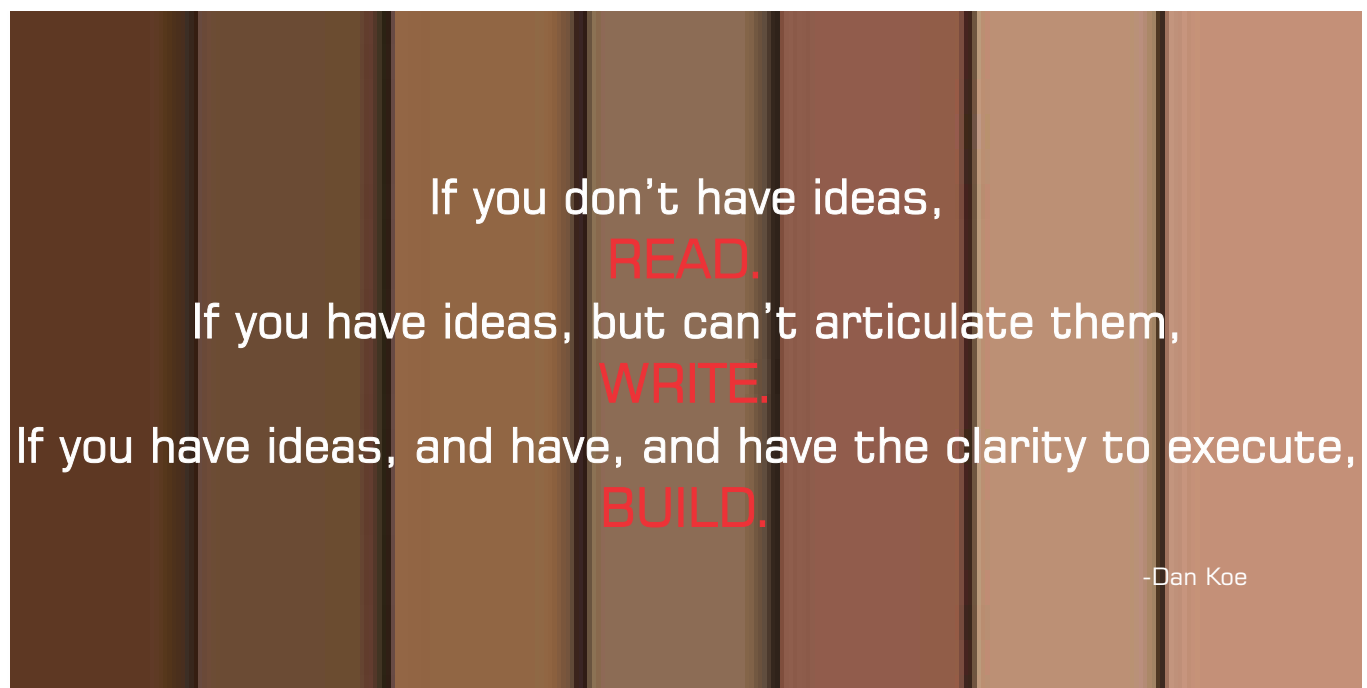
Despite occasional significant obstacles, the engagement with stakeholders—State Governors, Local government officials, and the community—plays a crucial role. Notably, communities prefer initial interactions with their village heads, emphasizing the



Engr. Rabiul A Bako, Assistant General Manager, Lines Projects

importance of recognizing their local leadership. When direct engagement fails at the community level, escalation to state and local government authorities becomes necessary for immediate mediation.

Basically, in building our transmission line projects, we strive for efficiency, acknowledging and addressing challenges through stakeholder engagement and adapting approaches to community preferences and concerns





# FG Commend TCN Human Capital Development as 25 Graduates from HR Learning Hub

By Eric Ephraim Ene



L-R: Permanent Secretary of the Federal Ministry of Power, Mr. Temitope Fashedemi, MD/CEO TCN, Engr. Dr. Sule Abdulaziz, COO of Pan-Atlantic University, Dr. Peter Bankole, and Director Transmission, Ministry of Power, Mr. Emmanuel Nosike

The Federal government has commended the Transmission Company of Nigeria (TCN) for prioritizing human capacity development through staff training, despite the challenging economic situation in the country.

Mr. Temitope Fashedemi, the Permanent Secretary of the Federal Ministry of Power, expressed this commendation during the graduation ceremony of the pioneer class of TCN Human Resources Learning Hub program on July 25, 2023, in Abuja.

Mr. Fashedemi who was also the Special Guest of Honour, highlighted that the training was to instil professionalism and confidence in the beneficiaries, thereby fostering consistency, accuracy, efficiency, best practices, and standardization—crucial elements for industry transformation. He used the occasion to advocate for partnerships with credible institutions to enhance staff development for maximum productivity.

Also speaking at the event, the Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Ahmed Abdulaziz, noted that TCN's human capital development is the key asset for the growth and transformation of Nigeria's power sector. He congratulated the 25 graduates for their dedication and resilience, urging them to apply their acquired knowledge and skills confidently to enhance workplace efficiency.

Engr. Abdulaziz emphasized the significance of the Learning Hub as a beacon of hope and progress, reflecting TCN's commitment to invest in its workforce. He called for support and collaboration from stakeholders for a better future in Nigeria's power sector. Expressing gratitude to TCN staff for their commitment and hard work, Engr. Abdulaziz highlighted the ongoing efforts of TCN to



Group photograph of MD/CEO, TCN, Perm Sec, Ministry of Power, COO of Pan-Atlantic University, with the graduands

ensure a reliable and efficient transmission network for Nigeria's growth.

In his welcome address, Mr. Justin Dodo, the Executive Director of Human Resource & Corporate Service and founder of TCN HR Learning Hub, commended the Company's Management for its commitment to capacity building. He emphasized the noble initiative of establishing the HR Learning Hub in partnership with Pan Atlantic University.

Mr. Dodo stressed the power industry's critical role in sustainable development, while advocating for consistent training and development as the most reliable means to achieve and sustain high productivity and performance. He congratulated the graduates and urged them to apply their acquired knowledge purposefully.

Mr. Dodo also advocated for a robust Learning and Development Plan encompassing all facets of TCN to encourage healthy interdependence for building a culture of competence, excellence, and integrity.

In his address, the keynote speaker and COO of Pan-Atlantic University, Dr. Peter Bankole, underscored the importance of continuous training for human capital development and organizational advancement. Goodwill messages were conveyed by NAPTIN, Mainstream Energy, NDPHC, and NEMSA.

The ceremony concluded with the presentation of certificates to the 25 graduands, witnessed by top government officials from the Federal Ministry of Power, industrial players, and TCN staff.

# TCN Management Addresses Training Concerns, Pledges Commitment to Equitable System

By Latifat Haruna

In a proactive move towards organizational enhancement, the Management of the Transmission Company of Nigeria (TCN), has assured that it will continue to engage in a constructive dialogue with members of the Senior Staff Association of Electricity and Allied Companies (SSAEAC), to rectify training lapses and ensure a more equitable system for the future.

The Managing Director/CEO, TCN, Engr. Dr. Sule Ahmed Abdulaziz, represented by the Executive Director Human Resource & Corporate Services, Mr. Justin Dodo, conveyed these assurances during the meeting with SSAEAC on Thursday, 23rd November 2023, at the company's headquarters. Dr. Abdulaziz reaffirmed the Management's unwavering commitment to ensuring comprehensive training for the staff, recognizing its pivotal role in professional development.

Acknowledging the successes achieved in the past year, Dr. Abdulaziz expressed gratitude to SSAEAC for their patience and cooperation. He further recognized the challenges faced during the year and anticipated their continued collaboration to address outstanding issues in the upcoming year.

Commending the efforts of TCN management, SSAEAC Chairman Comrade Louis Nwachukwu applauded the accomplishments of the team and affirmed an ongoing partnership between his team and TCN workers. He underscored the joint commitment to fulfilling responsibilities with the shared objective of fostering a cohesive and efficient work environment.

However, Comrade Nwachukwu raised concerns about the irregularity of meetings, pointing out that the conditions of service stipulate a need for more frequent gatherings. He urged the management to investigate training and nomination procedures, highlighting perceived inconsistencies and a lack of transparency. Advocating for a more equitable and inclusive approach to training opportunities, Comrade Nwachukwu emphasized the importance of fairness in professional development within the organization.

This collaborative discourse between TCN management and SSAEAC reflects a proactive approach to addressing concerns, fostering transparency, and ensuring the continued growth and efficiency of the organization.



TCN Management and SSEAEAC Executives

# NUEE Applauds Management for Converting Casual Workers to Contract Staff

By Betnah Ebiegberi-Spiff



TCN Bauchi management team and Bauchi Chapter executives of NUEE

**T**he management of TCN has been applauded for the progressive approach taken in the recent conversion of casual staff to contract positions within the company.

The Vice President of the National Union of Electricity Employees (NUEE), Northeast Chapter, Comrade O.M., Agbata, conveyed the commendation during a meeting between the union's regional executives and Bauchi Regional Management of TCN on July 20, 2023, in Bauchi.

Addressing the meeting, the Regional Transmission Manager of the Bauchi Region, Engr. Tijjani Ahmadu highlighted recent developments within the Region. He informed the meeting that casual staff in the Region had been transitioned into contract roles, and that the salaries of contract employees, had also been standardized. He also spoke on the ongoing office building project meant to improve staff working experience and productivity.

Engr. Ahmadu shed light on Corporate Headquarters' request for a comprehensive list of all contract staff in the Region, with

a view to potentially paving the way for giving them permanent appointments. He also mentioned the initiation of office accommodation construction for ISO and pending approval for TSP.

While Speaking, Comrade O.M. Agbata expressed his contentment with the management's responsiveness to the union's previous recommendations. He proposed the harmonization of stipends, particularly on night allowances for contract staff in the Region.

On his part, Engr. Abba Abdullahi, the Regional Operation Coordinator, highlighted the integration of contract staff with electrical expertise and relevant qualifications as contract operators and acknowledged the recent recruitment efforts that aimed to address the Region's manpower shortages.

Overall, the meeting revolved around key issues raised in previous meetings and also delved into other pertinent matters, including the need for increased funding for the Region in line with present realities.



# The Making and Evolution of an Electricity Market:

## Unpacking The Nigerian Electricity Act, 2021

By Ivie Ehanmo

### Part 5: – Renewable Energy To The Rescue

Continued from last edition

In the fourth part of the multi-part series that unpacks the Electricity Act, 2021, the licensing framework as expanded within the Act was highlighted alongside the implications for the industry.

In this fifth part, the long overdue incorporation of renewable energy development within the Act is highlighted alongside the implications for the industry in terms of the ability to attract the much needed investments into NESI or otherwise, in a bid to educate readers on the process, evolution and dynamics of electricity markets.

Commendably, the Act seeks to stimulate the contribution of renewable energy to Nigeria's energy mix. This is long overdue, considering that Nigeria ranks significantly well in terms of its renewable mix dynamics and its potential to attract investments in clean energy technologies into the country. The country's wind potential is around 0.01%, solar potential amounts to about 0.08%, while hydro constitutes a significant share at 18.40%, bringing the total contribution of renewable energy in the fuel mix dynamics to an estimate of 18.49% with significant available potential in the country.

Furthermore, at present, the legal and regulatory framework promoting off-grid investment in the country can be termed as being lean; with the framework encapsulated in limited policies and regulations such as the Nigerian Electricity Regulatory Commission (NERC) Mini-Grid Regulation, 2018, National Renewable Energy and Energy Efficiency Policy (NREEEP), 2015, etc., with scope for renewable energy investment incentives limited to areas such as the promotion of renewable energy use, feed-in tariffs for renewables, gender integration, etc. Commendably, the Bill makes provision for tax incentives to promote and facilitate the generation and consumption of energy from renewable energy sources in accordance with the provisions of the Nigerian Industrial Development (Income Tax Relief) Act and/or other fiscal policy framework(s).

It is therefore a positive step in the right direction for the Act

to recognise and significantly provide for the development and deployment of renewable energy in Nigeria's energy mix, unlike the current Electric Power Sector Reform Act (2005), that makes no reference to renewable energy development. Specifically, the Act seeks to provide a framework for the improvement of access to electricity in rural, unserved, underserved, peri-urban and urban areas, via the use of renewable energy off-grid and mini-grid solutions; promote indigenous capacity in technology for renewable energy sources through a framework for local content in the Nigerian electricity supply industry, etc. In addition, State Governments are encouraged by the Act to exploit renewable energy sources for the electrification of areas within the State. On a country-wide scale, the Act provides for the recognition and incorporation of renewable energy sources in the National Electricity Policy and Strategic Implementation Plan.

The Act makes provision for the Minister of Power in collaboration with the Ministry of Environment, to harness opportunities offered under clean development mechanism and other mechanisms including, but not limited to, carbon credit trading, renewable energy certificates, to promote the development and exploitation of renewable energy sources. For such mechanisms to thrive and yield the expected benefits, the necessary systems and processes must be in place such as: a well-functioning market, an effective trading system/platform, the necessary robust infrastructure, institutional know-how and capacity, etc.

The Commission is to stipulate Renewable Generation Obligations (RGO) for compulsory adherence by Generation licensees to promote electricity generation from renewable energy sources and reduce greenhouse gas emissions in residential areas. The RGO obligation is to be met by such generation licensees either generating electricity from renewable energy sources or purchasing renewable energy or any instrument representing renewable energy and selling such energy alongside electricity generated from non-renewable energy sources. In granting generating licenses, the Commission is to promote embedded generation,

hybridized generation, co-generation, and the generation of electricity from renewable sources such as solar energy, wind, small hydro, biomass, and such other renewable sources defined in the Act.

This envisages the integration of renewable energy into the grid (for on-grid generation). Such integration will require key preliminary considerations such as the structure of the transmission grid and network and the receptivity of the grid to renewable energy sources. The transmission network structure of a country's grid can either be a looped structure or one that is radial in structure. A looped structure is one that is multi-directional and in different paths, thus allowing for better management of the grid, improved reliability, and improved quality of service, as existent in for example, Eswatini, Senegal, Niger, Botswana, Zimbabwe, South Africa, etc. A radial structure on the other hand allows for only one directional power flow which is unreliable and contributes to a high number of system collapses, as existent in for example, Cameroon, Burundi, Angola, Nigeria, etc. For renewable energy sources to be effectively fed into the grid for systems with radial structures in particular, network upgrades will be required which will entail significant funding requirements. By the provisions of the Act, the cost of upgrading the transmission or distribution system is to be shared equally between the operator of the transmission or distribution system and the generator of electricity from renewable energy sources. The costs associated with connecting installations to the metering point is to be borne by the generator of electricity from renewable energy sources. The Commission is to issue commercial and technical regulations for connectivity to the grid.

The Act augments the existing powers of the Rural Electrification Agency with the addition of the management of renewable energy development to establish a new agency to be known as the Rural Electrification and Renewable Energy Agency (REAREA), to replace what is envisaged to be the extant Rural Electrification Agency (REA). Among the wide powers of the REAREA, the Agency is to actively promote the development and ensure the implementation of Government policies relating to rural electrification, renewable energy, and energy efficiency. Specifically, the Agency is to provide the framework that will support the development and utilization of renewable energy sources and an enabling environment to attract investment in renewable energy sources; the promotion for the productive use of renewable energy; the diversification of supplies to safeguard energy sources, improved access to electricity through the use of various renewable energy technology sources; the building of

indigenous capacity in various technologies for renewable energy sources; public education for renewable energy production and consumption, etc. it is important that any framework that is developed also looks through the gender lens, in order to mainstream gender related considerations in encouraging the productive use of energy from renewable energy sources. It is also important for institutional capacity to be developed, for the Agency to achieve its intended objectives as enshrined in the Bill.

The Act also establishes the Rural Electrification and Renewable Energy Fund (REREF) to support rural electrification and renewable energy development. Contributions to the fund are to be paid by eligible customers and licensees at a rate not exceeding 5% of the cost of electricity procured by eligible customers from non-renewable generators or any other rate determined by the Commission.

The Act makes provision for a simplified licensing procedure and fees regime to renewable energy service companies for the provision of electricity to consumers from renewable energy sources. The Commission is to develop light-handed measures for awarding renewable electricity concessions for generation, distribution of electricity within 10MWs, generating electricity exceeding 1MW and distributing electricity above 100KW in aggregate at the site.

Feed-in-Tariff rates are to be determined by the Commission considering factors such as the technology deployed for renewable energy generation, location of the generation facility, construction/commissioning/operation and maintenance costs, reasonable rate of return, etc. The Feed-in-Tariffs are to span for a period of 10-15 years and will be renewed every 2 years. The price differential between the purchase price of electricity generated from renewable energy sources and the price of electricity purchased from other sources will be taken into consideration by the Commission in setting the tariff rates. The Commission is also responsible for the introduction of feed-in tariffs for all small hydro schemes, all biomass co-generation power plants, solar and wind-based plants irrespective of their sizes with a term of up to 20 years to guarantee buyers under standard Power Purchase Agreements and provide return on investments.

It is important that there is an avoidance of overlap functions between the powers of the Commission and the REAREA.

A key provision in the Act is the requirement for licensees, contractors or sub-contractors or other entities undertaking

operations in the renewable energy sub-sector to ensure the inclusion of local content as part of their operational activities. This is pertinent to encourage the development of local manpower, capacity and know-how as the renewable sub-sector progresses along growth paths.

### Concluding Remarks

The full scale recognition of the need to harness and develop the country's renewable energy capacity as part of the contribution to the overall fuel mix is a long overdue but welcome development in the industry. Nevertheless, the integration of renewable energy into the grid will need to factor existing network and funding constraints, which can only be overcome with the right enabling environment to attract investments into the renewable energy sub-sector. The right enabling environment is also a pre-requisite for off-grid investments to thrive, given the interrelated and interlinked nature of the electricity value chain.

### Key Takeaways

The legal and regulatory framework promoting off-grid investment in the country needs to be robust and it also needs to align with investment law provisions. There is therefore a need for well-designed long-term legislation and enabling framework for the deployment of renewable energy technologies to guarantee investment security.

The Act recognises the need for an enabling framework for the efficient and sustainable production, conversion, distribution, marketing, and utilization of renewable energy. Mere recognition is not sufficient, as there needs to be clear actionable plans and instruments in place for an enabling framework that will bolster and attract investments into the sub-sector.

Financial and non-financial incentives must be made available

to secure investor confidence to boost renewable energy capacity in the overall energy mix.

Any form of carbon trading to promote the development and exploitation of renewable energy sources as envisaged in the Bill will require the necessary systems and processes to be in place such as: a well-functioning market, an effective trading system/platform, the necessary robust infrastructure, institutional know-how and capacity, etc.

Key preliminary considerations must be addressed before a successful integration of renewable energy into the grid can take place, which include the structure of the transmission grid and network and the receptivity of the grid to renewable energy sources, amongst others.

It is important that any framework that is developed by the Rural Electrification and Renewable Energy Agency, to support the development and utilization of renewable energy sources, also looks through the gender lens, to mainstream gender related considerations in encouraging the productive use of energy from renewable energy sources. It is also important for institutional capacity to be developed, for the Agency to achieve its intended objectives as enshrined in the Act.

It is important that there is an avoidance of overlap functions between the powers of the Commission and the REAREA.

The development of light-handed measures for the award of concessions and the removal of licensing barriers through simplified procedures to renewable energy companies is a welcome development, in so far as the laid down licensing procedures are adhered to by the regulator and applicable agency, to avoid any possible occurrence of arbitrary grant of licenses. Simplicity should not displace process efficiency.

***Too many people think the grass is greener on the other side of the fence, when they ought to just water the grass they are standing on***



# Ayede Sub-Region received a new 100MVA power transformer

As part of TCN's ongoing grid expansion project, on Thursday September 28, 2023, the Ayede Sub-Region received a new 100MVA power transformer and its accessories at the Jericho 132/33kV Transmission Substation in Ibadan. When installed, the transformer will increase the substation's capacity to supply bulk electricity to the Ibadan DisCo by 80MW.



Arrival of the new 100MVA power transformer at Jericho Transmission Substation in Ibadan



Side view of the transformer



Transformer accessories

# Gombe Transmission Substation Receives 100MVA Power Transformer

TCN, Bauchi Region took delivery of a new 100MVA 132/33kV power transformer in its Gombe Transmission Substation in Gombe State. Upon installation, the new transformer will increase the capacity of the substation by 80MW which will increase the allocated transmission to Yola Electricity Distribution Company. The power transformer is one of the several transformers delivered to TCN substations in Bauchi Region, under the ongoing TCN-World Bank-funded projects.



Arrival of the new 100MVA power transformer at Gombe Transmission Substation



Side views of the transformer



# TCN Commences Installation of New 60MVA Transformer at Birnin Kebbi

Brand new 60MVA 132/33kV power transformer recently taken to TCN's Birnin Kebbi Substation, Kebbi, has been placed on the plinth as part of the installation process. After installation, the transformer will increase capacity by 45MW and boost power supply in Birnin Kebbi and environs. The transformer is part of TCN's FGN project.



Arrival of the new 60MVA power transformer at Birnin Kebbi Transmission Substation, Kebbi State



Side view of the new transformer



The transformer on plinth



## Oworo Substation of TCN Receives 60MVA Transformer, Accessories

The Oworo 132/33kV Transmission Substation in Lagos Region of TCN received a 60MVA power transformer and its accessories. On installation, the 60MVA transformer will increase the capacity of the substation, thereby improving bulk electricity supply to Ikeja DisCo for offtake to its customers in Ogudu, Oworo, and Igbobi environs in Lagos. The transformer is part of the TCN-Central Bank of Nigeria projects.



The new 60MVA power transformer at Oworo 132/33kV Transmission Substation, Lagos State



Transformer accessories

# TCN Takes Delivery of New 60MVA Power Transformer

Ojo Stores in Lagos, took delivery of a new 60MVA power transformer on the 20th November, 2023. The new transformer which is awaiting deployment to a TCN's project site is sponsored by Central Bank of Nigeria.



The new 60MVA power transformer at Ojo Stores, Lagos State



Side views of the transformer



# Maryland 132/32kV Substation Receives New Power Transformers

The Maryland 132/33kV Transmission Substation recently received a new 100MVA power transformer and its accessories. When installed, the transformer will increase the substation's capacity by 80MW. The new 100MVA power transformer is a part of the FGN Power Project in TCN. Also, the substation is expecting the delivery of additional two new 100MVA power transformers under the TCN-World Bank projects. The 100MVA transformers will replace the existing transformers in the substation and increase the substation's capacity to 300MVA (240MW). The new transformers will improve bulk electricity supply to Ikeja DisCo, for offtake to its customers in Alausa, Maryland, and Mile 12 in Lagos. The World Bank is currently installing four 33kV feeder bays in the substation's switchyard.



The new 100MVA power transformer at Maryland 132/33kV Transmission Substation



Transformer accessories



# TCN 60MVA Transformer at Isolo Substation Undergoes Upgrade to 100MVA

A 60MVA 132/33kV transformer at TCN's Isolo Transmission Substation is currently being upgraded to 100MVA capacity. The transformer upgrade, which is being financed by the Central Bank of Nigeria (CBN), will increase the capacity of the substation from 150MW to 182MW. This upgrade will enable both Ikeja and Eko DisCos being served from this substation to offtake more bulk power for their customers in Isolo, Mushin, Nitel, Ptc, Ajao Estate, Aswani and some communities along Oshodi Express Way.



The 60MVA power transformer being upgraded to 100MVA at Isolo Transmission Substation, Lagos State



Ongoing work at the substation



L-R, Engr. (Mrs.) Banke Williams, SM (Projects) Lagos Region, Mr. Festus Olaoye, Beam Energy Contractor, Engr. (Mrs.) Funmilayo Ekoko, AGM (T) Akangba Sub-Region, and Engr. Oluyide Emmanuel, Manager (PC&M) Akangba Sub-Region

# DisCos, GenCos, Attend Training on NSONG Portal

By Omideji Oluwakayode



Middle, Engr. Billiaminu Ishola, General Manager, NCC, at the opening session of the NSONG web portal training

In compliance with the directives of the Nigerian Electricity Regulatory Commission (NERC), the Transmission Company of Nigeria (TCN), has organized training on the usage of NSONG Web portal for Distribution and Generation companies.

The training which was held recently at the National Control Centre (NCC), Osogbo was aimed at acquainting the generating and transmission companies with the workings of the NSONG Web portal.

It would be recalled that NERC had recently directed TCN to notify Distribution Companies (DisCos) of their Day-Ahead

load off take, as well as Generation Companies (GenCos) of their Day-Ahead instruction through the NSONG portal to improve the communication system.

Addressing participants at the training, the General Manager (NCC), Engr. Billiaminu Ishola, said that the Information and Communication Technology (ICT) Unit of TCN developed the webpage to create a better means of communication among NCC, DisCos & GenCos about load off-take and day-ahead instruction.

While noting that the knowledge acquired from the training would translate to smooth operation of the National Grid, he stressed that the NSONG Web portal is a stop-gap solution as the SCADA system remains the best means to identify and query issues in the system. Ishola appealed to DisCos and GenCos to cooperate fully with NCC so as to achieve seamless electricity flow in the country.

According to him, "In any power system, there is need for cooperation between NCC, DisCos & GenCos. Let us put our best for the system. If we can't fix electricity, we will not be able to fix any problem in this country."

The training which was facilitated by staff from the ICT Unit of TCN also had in attendance, NCC Staff, as well as, one representative from the Generation and Distribution Companies.



Cross section of attendees during the NSONG Portal training in NCC Osogbo



# Safety: TCN Kano Region Receives PPE Supplies

By Suleiman Hassan



Engr. Muhammed Salihu Umar, Regional Safety Manager, Kumbotso Transmission Substation with PPE supplies

**A**s part of its commitment to ensure safety in the workplace, TCN has provided staff in Kano Region with more safety wares. The Region recently took delivery of personal protective equipment (PPE) for its staff across all work locations within the region.

Engineer Muhammed Salihu Umar, the Regional Safety Manager at the Kumbotso Transmission Substation in Kano, announced the delivery of eight categories of high-quality PPE from TCN's corporate headquarters in Abuja, including coveralls, 150 head hats, 16 pairs of safety shoes, high-rated 12kV hand gloves, quality safety harnesses (safety belts), different sizes of fire extinguishers, and secondary test kits recently.

Umar said that, "these PPE items are integral to bolstering the Health, Safety, and Environment (HSE) department of the region. They underscore the absolute necessity of adhering to safety measures while performing work in a potentially dangerous environment".

While noting that management has fulfilled its part by providing these crucial protective measures, Umar added that "the Kano Region has a track record of steadfast adherence to the use of PPE, and it is expected that these new supplies will further enhance safety compliance".

He stressed the need for more public awareness regarding the dangers associated with encroachment on Transmission Right of Way and soil excavation around Transmission towers within the Kano Region.



Some of the PPE supplies



Some of the PPE supplies



# TCN Nationwide Projects

## Lagos Region

The Lagos Region of TCN covers mainly Lagos State and some parts of Ogun State. It interfaces with three (3) Distribution Companies namely; Ikeja Electricity Distribution Company (IKEDC), Eko Electricity Distribution Company (EKEDC), and Ibadan Electricity Distribution Company

### Completed Transformer Installations

SUBSTATION	PROJECTS
Ajah	Installed 100MVA, 132/33kV transformer and constructed additional 3 X 33kV feeder bays.
Ogba	Installed 100MVA 132/33kV transformer and new 33kV bay Installed new circuit breaker on PTC Express 33kV feeder Commissioned 2 new 33kV bay on 100MVA
Agbara	Installed 132kV Circuit Breaker on Agbara/Ojo 132kV line 1 Installed of 33kV secondary bus VT on T1 & 450MVA
Egbin	Installed circuit breakers (22 330kV) and (527 330kV) Installed 60MVA transformer
Ikorodu	Installed new 60/65MVA transformer
Ejigbo	Installed new circuit breaker on Egbe 33kV
Itire	Installed new 60MVA 132/33kV transformer
Isolo	Installed 60MVA 132/33kV transformer Installed a new transformer isolator
Akangba	Installed 60MVA 132/33kV transformer Installed 330KV bus coupler breaker
Alausa	Installed new 132/33kV 100MVA transformer
Alimosho	Installed 3Nos. voltage transformers on the secondary of 100MVA 132/33kV transformer Installed earthing transformer on 100MVA 132/33kV power transformer Installed 132kV breaker on the primary of 100MVA transformer Installed 33kV breaker on Agege 33kV feeder Installed 33kV breaker on Tower 33kV feeder
Oke-Aro	Installed 33kV breaker on Akute 33kV feeder Installed new circuit breaker on New Iju 33kV feeder
Ayobo	Installed 33kV breaker on Amikanle feeder
Ikeja West	Installed new 330kV breaker on Ikeja West/Akute bay Installed new 132kV breaker on the secondary side of 100MVA 330/132/33kV transformer Installed new 132kV breaker on the secondary side of 650MVA 330/132/33kV Transformer Installed new 330kV breaker on Ikeja West/Egbin main bay Installed 132kV of Ikeja West/Alimosho line 2 breaker

### Completed Transmission Line Projects

Ajah	Installation of 100MVA, 132/33kV transformer and construction of additional outdoor 3 X 33kV feeder bays Installation of 1x 63MVA 132/33kV mobile Substation Installation of 60MVA, 132/33kV power transformer
Alagbon	Installation of 1x300MVA 330/132kV transformer Installation of 2x100/125MVA power transformers
Lekki	Installation of 1x300MVA 330/132kV power transformer Installation of 2x60/75MVA 132/33kV transformers.
Ibeju Agbe	Installation of 2x150MVA & 2x60MVA power transformers.

### Ongoing Transformer Installations

Oworo	Construction of associated additional 33kV feeder bay. Installation of 60MVA 132/33kV transformer Construction of associated additional 33kV feeder bay
Ijora	Installation of 100/125MVA 132/33kV transformer Additional 100/125MVA 132/33kV transformer for reinforcement
Egbin	Replacement of all obsolete 330kV 132kV control and relay panels with Digital Control System; and supply & installation of 132/33kV HV switchgears and associated equipment.
Maryland	Installation of 100/125MVA 132/33kV transformer and installation of HV switchgears & associated equipment. Upgrading of 60MVA to 100MVA 132/33kV transformer
Odogunyan	Erecting of new 33kV feeder bay at Odogunyan Transmission Substation
Alausa	Upgrading of 30MVA to 1x100/125MVA 132/33kV transformer Movement of the transformer secondary and associated feeders from indoor to outdoor
Akangba	Replacement of 90MVA with 50MVA 330V transformer.
Agbara	Installation of 2x100MVA 132/33kV transformers Construction of additional 33kV feeder bays.
Ojo	Upgrading of 30MVA to 1 X 100/125MVA 132/33kV transformer Construction of 3Nos. 33kV bays
Akoka	Installation of 60MVA 132/33kV transformer
Epe	Installation of 2x50MVA & 2 X 60MVA transformers
Ikeja West	Installation of new circuit breaker on Ikeja West/Oke-Aro 330kV line 2. Installation of circuit breaker on Ikeja West/Akangba 330kV line 2.
Itire	Installation of GIS indoor equipment and reinforcement with 1x 60/75MVA 132/33kV transformer Upgrading 1x 30MVA to 1x 60MVA 132/33kV transformer
Isolo	Upgrading of 45MVA to 60MVA 132/33kV power transformer Installation of additional 3Nos. feeder bays. Installation of new 60MVA 132/33kV transformer and new transformer isolator

### Ongoing Substation Projects

Eko Atlantic City	Construction of 2x60MVA 132/33kV Transmission Substation
Akoka	Rehabilitation of control building structure and sinking surrounding land area Installation of GIS indoor equipment and reinforcement with 1x60/75MVA 132/33kV transformer
Ota	Upgrading of T1 40MVA 132/33kV transformer to 100MVA 132/33kV transformer and additional 33kV feeder bays Installation of 100MVA 132/33kV transformer and its associated 33kV feeder bays
Oke-Aro	Replacement of differential protection relay on 300MVA 330/132/33kV transformer Installation of additional 100MVA 132/33kV transformer and 4x33kV feeder bays
Papalanto	Rehabilitation of control building structure and sinking surrounding land area Installation of GIS indoor equipment and reinforcement with 1x60/75MVA 132/33kV transformer
Amuwo	Upgrade of 2x30MVA, 132/33kV power transformers Complete rehabilitation of 132kV GIS Substation
Itire	Rehabilitation of control building structure and sinking surrounding land area
Olorunsogo	Re-gravelling of Olorunsogo 330kV phase 1 and 2 switchyards
Ayobo	Extension of transformer bay and 33kV feeders
Apapa	Rehabilitation and reinforcement of GIS installation with 2x60MVA transformers

### Ongoing Transmission Line Projects

Eko Atlantic	Construction of 132kV DC transmission line from Lekki to Eko Atlantic
Ikeja West	Construction of 36km, 132kV DC transmission line from Ajegunle to Badagry
Epe	Construction of 330kV DC transmission line from Omotosho to Epe to Aja
Ota	Rehabilitation of Ota/Ikeja West 132kV lines 1 and 2 bays

## Abuja Region

The Abuja Region of TCN covers Abuja, Nasarawa, Kogi, parts of Edo, Niger and Kaduna States, and interfaces with Abuja Electricity Distribution Company (AEDC)

### Completed Transformer Installations

SUBSTATION	PROJECTS
Ajaokuta Main	Repaired the 162MVA 330 / 132 / 33kV power transformer
Kubwa	Replaced 330kV circuit breaker and its associated equipment
Katampe	Installed brand new 60MVA 132 / 33kV power transformer
Karu	Installed 60MVA transformer
Keffi	Installed 100MVA transformer
	Installed 60MVA transformer

### Completed Substation Projects

Dawaki	Constructed a new 132/33kV GIS Substation at Gwarinpa equipped with 2Nos. 60MVA 132 / 33kV transformers
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### Ongoing Substation Projects

West Main Lugbe	Construction of new 330 / 132kV Substation at (Lugbe) to be equipped with 2x150MVA, transformers and 3Nos. 60MVA, 132 / 33kV (with 132kV outdoor GIS Switchgear
Wumba, Lokogoma	Construction of new 132 / 33kV Substation at Wumba, Lokogoma to be equipped with 2Nos. 60MVA transformers
Kuje	Construction of Kuje 330 / 132 / 33kV Substation
New Apo	Construction of New Apo 330 / 132 / 33kV Substation

### Ongoing Transmission Line Projects

Kuje	Construction of 35km of new double circuit line from New Apo 330 / 132kV Substation to the proposed 132 / 33kV, 330 / 132 / 33kV Substation
New Apo	Construction of about 172km of new double circuit line from Lafia 330kV Substation (new) to New Apo 330 / 132 / 33kV Substation
Old Apo	Construction of about 7km of double circuit line from New Apo 330 / 132kV Substation
West Main Lugbe	Construction of 2x132kV double circuit line from ongoing Kuje 132kV Substation to West Main Lugbe 330 / 132 / 33kV Substation
	Construction of 2x132kV line bays and 4x132kV line bays.
Wumba, Lokogoma	Construction of 2x132kV line bay from New Apo to Wumba, Lokogoma.



## In-House Engineers at Work



Energization of newly installed 150MVA power transformer in 330/132/33kV Kumbotso Substation in Kano, on Thursday, November 23, 2023. With the commissioning of the new transformer, TCN has added 120MW to the substation capacity



TCN Kano Region energized a new 40MVA 132/33kV power transformer at its Bichi Transmission Substation on Sunday, November 26, 2023. The 40MVA transformer, which replaced the 20/30MVA 132/33kV Mobile Transformer in the substation, added 32MW to the capacity of the substation



Installation of 60MVA power transformer by TCN engineers at 132/33kV Kubwa Transmission Substation



## Kano Region

The Kano Region of TCN covers some states in the North West, North East namely, Kano, Katsina, Jigawa, some part of Bauchi State, and some parts of International line, Gazaoua (Niger Republic). The Region interfaces with Kano Electricity Distribution Company (KEDCO), and Jos Electricity Distribution Company (JEDC)

### Completed Transformer Installations

SUBSTATION	PROJECTS
Bichi	Installed 20 / 30 MVA 132 / 33 kV Substation now replaced with 40 MVA
Hadejia	Installed 40 MVA 132 / 33 kV power transformer
Kumbotso	Relocation of 75 MVA 132 / 33 kV reactor to the new bay

### Completed Substation Projects

Rimin Zakara	Construction of 2x150 MVA 330 / 132 kV and 2x60 MVA 132 / 33 kV Substation
Bichi	Construction of 1.2km access road and drainage from Substation to the Kano-Katsina Expressway

### Ongoing Transformer Installations

Kumbotso	Installation of 100 MVA power transformer
Dakata	Installation of 150 MVA 330 / 132 kV power transformer
Dakata	Construction of Dakata and Hadejia line bay
Jama'are, Bauchi	Installation of 40 MVA 132 / 33 kV power transformer
Kankia Substation	Installation of 2x60 MVA 132 / 33 kV power transformer with its line bay.
Kumbotso, Dakata, and Dan Agundi Substation	Installation of 100 MVA 132 / 33 kV power transformer with its line bay and control room extension.

### Ongoing Substation Project

Walalemba	Construction of 132 / 230 kV Substation
Katsina	Construction of 2x150 MVA 330 / 132 kV and 2x60 MVA 132 / 33 kV Substation
Danbatta, Kano	Construction of 2x60 MVA 132 / 33 kV Substation
Bichi, Kano	Construction of 2x60 MVA 132 / 33 kV Substation
Kanyi, Kano	Construction of 2x60 MVA 132 / 33 kV Substation
Dangwauro, Kano	Construction of 2x60 MVA 132 / 33 kV Substation
Kankara, Katsina	Construction of 2x60 MVA 132 / 33 kV Substation
Malumfashi, Katsina	Construction of 2x60 MVA 132 / 33 kV Substation
Dutshima, Katsina	Construction of 2x60 MVA 132 / 33 kV Substation
Kurfi Katsina	Construction of 2x60 MVA 132 / 33 kV Substation

### Ongoing Transmission Line Projects

Kano and Katsina	Construction of Kano-Katsina 330 kV Double Circuit transmission line
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## Enugu Region

Enugu Region cover Enugu, Anambra, Ebonyi, Benue, Kogi, Cross River, as well as parts of Delta State. The Region interfaces with Enugu Electricity Distribution Company (EEDC), Benin Electricity Distribution Company (BEDC), and Jos Electricity Distribution Company (JEDC).

### Completed Transformer Installations

SUBSTATION	PROJECTS
Asaba	Installed 150MVA 330 / 132kV transformer
Onitsha	Installed 30MVA 132kV power transformer and new Control Room
Nkalagu	Installed 60MVA, 132kV transformer and 3N feeders
Abakaliki	Rehabilitation of 132kV bus coupler isolator

### Completed Transmission Lines/Tower Projects

Onitsha	Reinforced Tower TB on Onitsha/Okapi 330 Line
Onitsha-Oji River	Repaired towers along Onitsha/Oji River 132kV line that collapsed as a result of vandal activities
Onitsha-Oji River	Reinforcement of tower of Onitsha-Oji River 132kV line

### Ongoing Transformer Installation

Onitsha	Reinforced Tower TB on Onitsha/Okapi 330 Line
Onitsha-Oji River	Repaired towers along Onitsha/Oji River 132kV line that collapsed as a result of vandal activities
Onitsha-Oji River	Reinforcement of tower of Onitsha-Oji River 132kV line
Asaba	Upgrading 60MVA to 2X100MVA 132 / 330 Transformers
Onitsha	Installation of 60MVA 132kV power transformer
Onitsha	Installation of 30MVA 132kV power transformer with associated new Control Room
Onitsha	Installation of 60MVA 132 / 66kV power transformer
Onitsha	Upgrading of the 150MVA 132kV to 60MVA 132 / 330 power transformer
Nsukka	Switchyard extension Installation of 100MVA, 132kV transformer and 3Nb. 33kV feeders
New Have	Installation of 150MVA 132kV transformer Installation of 60MVA 330kV transformer
Abakaliki	Installation of 60MVA 330kV transformer
Ugwuaji	Installation of 60MVA 330kV transformer Installation of 5MVA 330 / 11kV reactor
Apir	Upgrading 150MVA transformer capacity to 300MVA
Apir	Upgrading 60MVA to 100MVA transformer
Otukpo	Upgrading 7.5MVA to 60MVA transformer

### Ongoing Transmission Line Project

Asaba	Construction of 2X330kV lines Kwale Genco Asaba 330kV Double Circuit lines
Asaba	Construction of two-line bays for Kwale Genco 330kV
Onitsha-Oji River	Reconductoring of 72KM Onitsha-Oji River 132kV Single Circuit Transmission Line



## PortHarcourt Region

The Port Harcourt Region of TCN covers most of the South-South States and some South-East states namely, Rivers, Akwa Ibom, Cross Rivers, Bayelsa, Imo and Abia States. The Region interfaces with Port Harcourt Electricity Distribution Company (PHEDC), and Enugu Electricity Distribution Company (EEDC)

### Completed Transformer Installations

SUBSTATION	PROJECTS
Port Harcourt Town	Installed 100MVA transformer with 4nos 33 kV feeders
Port Harcourt Mains	Installed 100MVA 132/33 kV transformer

### Completed Substation Projects

Afam 4	Construction of block wall fence for 33kV switchyard.
Owerri Work Centre	Raising of perimeter fence of the premises
Afam 5	Construction of 33kV Switchyard Control building
Owerri Work Center	Construction of access road from office building to switchyard.

### Ongoing Substation Project

Port Harcourt Town	Installed 100MVA transformer with 4nos 33 feeders
Port Harcourt Mains	Installed 100MVA 132/33 transformer
Afam 4	Construction of block wall fence for 33kV switchyard.
Owerri Work Centre	Raising of perimeter fence of the premises
Afam 5	Construction of 33kV Switchyard Control building
Owerri Work Center	Construction of access road from office building to switchyard.
Afam 4	Construction of new Control building for 33kV Switchyard
Afam 4	Rehabilitation of 16AC baykV Switchyard
Afam 1-3	Construction of 132V Switchyard control building
Ugep	Construction of 2x60MVA 132V Substation
Itu	Upgrading of 132V Substation
Oron	Construction of 2x60MVA 132kV Substation
Ididdep	Construction of 2x30/40MVA 132kV Substation
Port Harcourt Town	Building of 33kV Transmission Substation Control Room
Yenagoa	Construction of 132V Transmission Substation
Owerri Work Centre	Upgrade of 132V to 330kV Substation with 2x150MVA 330/132V transformer and 2x60MVA 132V transformer and 132V switchyard
Port Harcourt Main	Rehabilitation/Upgrade of 132V switchyard

### Ongoing Transmission Line Projects

Afam 4	Construction of Afam Onne 33kV Double Circuit transmission lines
Afam 6	Construction of Afam Ikot Ekpene 33kV Double Circuit transmission line
Port Harcourt Mains	Reconductoring of 18km Port Harcourt Main Port Harcourt Town 132V DC transmission line
Aba	Reconductoring of 10KM Alao Aba 132kV Double Circuit transmission line

### Ongoing transformer Installation

Itu	Installation of new 100MVA 132/33kV power transformer
Rumuosi	Installation of 60MVA transformer with 4No. feeders
Elelenwo	Installation of 60MVA transformer with 4No. feeders

## Bauchi Region

Bauchi Region of TCN covers the seven states of the North-East of Nigeria - Adamawa, Bauchi, Borno, Gombe, Plateau, Taraba, and Yobe as well as Kafanchan area in Kaduna State in the North-West. The Region interfaces with three Distribution Companies (DisCos), namely Jos Electricity Distribution Company, Kaduna Electricity Distribution Company, and Yola Electricity Distribution Company.

### Completed Transformer Installations

SUBSTATION	PROJECTS
Jos	Installed 330/132/33 kV, 150MVA T1A transformer Commissioned 1x75MVA Reactor with Sergi Protection Installed 2x60MVA 132/33 kV power transformers in Kafanchan
Gombe	Installed 60MVA 132/33 kV power transformer Installed a dedicated Federal University Kashere (Gombe State) 33 kV line bay extension Installed a dedicated Doma 33 kV line bay extension Installed a dedicated Nigeria Army University (Biu, Borno State) 33 kV line bay extension at Biu Installed 2x50MVA Circuit Breakers for unbanking Turn in and out with 2x60MVA, 132/33 kV Substation at Biliri

### Completed Transmission Lines/Tower Projects

Damaturu	Completed Re-erection of 10No. 330 kV Towers along 330 kV Damaturu -Molia (Maiduguri) Transmission
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### Ongoing transformer Installation

Yola	Installation of 1x150MVA, 330/132 kV and 2x100MVA, 132/33 kV power transformers, High Voltage Switchgears, and Associated equipment with 3No. additional feeder bays
Mayo Belwa	Installation of 1No. 150MVA, 330/132 kV power transformers, High Voltage Switchgears and Associated Equipment with 3No. additional feeder bays
Potiskum	Installation of 20x60MVA, 132/33 kV power transformers, high voltage switchgears, associated equipment and complete rehabilitation of Substation
Damaturu	Installation of 1No. 150MVA, 330/132 kV power transformers, high voltage switchgears and associated equipment with 3No. additional feeder bays
Biu	Installation of 1x60MVA, 132/33 kV power transformers, high voltage switchgears, associated equipment and complete rehabilitation of Substation.
Maiduguri	Installation of 1No. 150MVA 330/132 kV power transformer, high voltage switchgears and associated equipment with 3 No additional feeder bays
Jos	Installation of 1x300MVA, 330/132/33 kV and 1x100MVA power transformers, 330kV high voltage switchgears and associated equipment.
Bauchi	Installation of 1No. 150MVA 330/132 kV power transformers, high voltage switchgears and associated equipment with 3No. additional feeder bays Upgrading of 22.5MVA and 30MVA transformer to 2x 60MVA 132/33 kV Transformers
Gombe	Installation of 1x300MVA, 330/132 kV and 100MVA, 132/33 kV transformers with high voltage switchgears and associated equipment bus with 3No. additional feeder bays

### Ongoing Substation Project

Bauchi	Construction of 2x150MVA and 2x60MVA Substations
Jos	Rehabilitation of civil structures of the Control Room and digital control system
Maiduguri	Rehabilitation of Control Room with digital control system and associated high voltage switchgears
Jalingo	Upgrading from 132kV to 330kV Substation with 1x150MVA, 330/33kV power Transformers and 1x100MVA, 132/33kV Transformer, high voltage switchgears and associated equipment and construction of 330/132kV control room
Song	2x60MVA, 132/33kV Substation at Song plus line bay extension
Little Gombi	2x60MVA, 132/33kV Substation at Little Gombi plus line bay extension
Hong	2x60MVA, 132/33kV Substation at Hong plus line bay extension
Gulak	2x60MVA, 132/33kV Substation at Gulak plus line bay extension
Mubi	2x60MVA, 132/33kV Substation at Mubi plus line bay extension 132kV Double Circuit line bays extension at Yola

### Ongoing Transmission Line Projects

Yola-Song-Little	132kV Double Circuit Yola-Song-Little Gombi-Hong-Gulak-Mubi Transmission line
Gashua and Nguru	132kV Dramaturge-Gashua-Ngur-Hadejia Transmission lines with Substations and line bays extension at Gashua and Nguru

## Kaduna Region

The Kaduna Region of TCN covers Kaduna, Zamfara, and Kebbi States, and a part of Niamey in Niger Republic. The Region interfaces with Kaduna Electric Distribution Company (KAEDCO), and Kano Electricity Distribution Company (KEDCO) through the 132/33kV Funtua Substation.

### Completed Transformer Installations

SUBSTATION	PROJECTS
BirninKebbi Substat	Installed 100MVA 132/33kV transform
MandoKaduna Town Substation	Replaced the Bucholz relay valve seal of 330/132/33kV transformer T2A.
Gusau	Installed 1X60MVA, 132/33kV transformer at Gusau

### Completed Transmission Lines Projects

Zaria	Installed 330/132/33kV line isolator
Mando-Kaduna Town Substation	Installed a new distance protection relay for 330kV line

### Ongoing transformer Installation

Yelwa Yawuri	Installation of 1x60MVA 132/33kV transformer at Yelwa Yawuri
Birnin-Kebbi	Installation of 2x150MVA 330/132/33kV and installation of 1x60MVA 132/33kV power transformer at Birnin-Kebbi

### Ongoing Substation Project

MandoKaduna Town Substation	Installed a new distance protection relay for 330kV line
Yelwa Yawuri	Installation of 1x60MVA 132/33kV transformer at Yelwa Yawuri
BirninKebbi	Installation of 2x150MVA 330/132/33kV and installation of 1x60MVA 132/33kV power transformer at BirninKebbi
Zaria	Construction of new 330/132/33kV substation at Jaja.
Kaduna City Millennium	Construction of new 330/132/33kV substation at Millennium.
Jaji, Kaduna	Construction of new 132/33kV substation
Kaduna Metropolis	Construction of new 132/33kV substation at Mahuta
Sokoto	Construction of 2x60MVA 132/33kV substation at Sokoto
Kalgo	Construction of 1x150MVA 330/132/33kV substation at Kalgo
Fako Sarki, BirninKebbi	Construction of 2x60MVA 132/33kV substation at Fako Sarki
Mando, Kaduna	Regravelling of Mando 132/33kV switch yard
Kakuri, Kaduna	Regravelling of Kaduna town 132/33kV switch yard
Kalgo	Construction of 8x33kV line bays and 1x100MVA 132/33kV with 3N33kV outgoing feeders
Sokoto	Construction of 2x150MVA 330/132/33kV substation at Sokoto 330kV Substation with 4x33kV line bays and 2x60MVA 132/33kV with 6N outgoing feeders
Mando 132/33kV Sub-Region	Construction of 132kV line bay extension
Sokoto	Construction of 2x33kV line bays at Sokoto new 330kV Substation



### Ongoing Transmission Line Projects

Kaduna	Construction of double circuit line from Kaduna to Jos
Mando Substation	Construction of new 132/110kV DC CCT Quad Conducted Transmission line from Mando to Rimin Zakara, Kano
Jaja	1.5 km turn-in-turn-out
Kaduna Millenium City	10km turn-in-turn-out
Jaji-Kaduna	1km turn in turn out at Jaji
Kaduna Metropolis	2.5km turn-in-turn-out in Mahuta
Birnin-Kebbi	Construction of 330kV transmission line from Birnin-Kebbi to Sokoto
Fakona and Argungu	Turn-in-turn-out on existing Birnin-Kebbi to Sokoto 132kV/110kV SC line.
Kalgo, Sokoto	Construction of 145km/330kV HV Transmission line from New Kalgo 330/132kV Substation to New Sokoto 330/132/110kV Substation

## Osogbo Region

The Osogbo Region of Transmission Company of Nigeria covers mainly the South Western States of Oyo, Osun, Ekiti, Ondo, Ogun and some parts of Kwara and Niger States in the North Central. The Region interfaces with two (2) Distribution Companies namely, Benin Electricity Distribution Company (BEDC) and Ibadan Electricity Distribution Company (IBEDC).

### Completed Transformer Installations

SUBSTATION	PROJECTS
Ijebu-Ode Substation	Installed No. incomer (33kV) and No. outgoing feeders
Ado-Ekiti	Constructed 33kV bus section isolator between T2, 40MVA 132/33kV transformer and T3, 60MVA 132/33kV transformer
Osogbo	Installed 60MVA 132/33kV T8 transformer
Akure	Upgraded 60MVA 132/33kV transformer secondary conductor from 250mm to 500mm

### Completed Transmission Lines Projects

Ayede – Eleyele	Re-conducted 132kV double circuit circuit line (Ayede-Eleyele)
Ayede – Jericho	Re-conducted 132kV double circuit line (Ayede-Jericho)

### Ongoing Transformer Installations

Ayede	Installation of new 150/165MVA 330/132/33kV Transformer T1A
Ibadan-North	Upgrading of 2x60MVA to 2x100MVA Transformer.
U.I.	Installation of 63MVA 132/33kV, 1No. incomer and 3No. outgoing feeders
Ijebu-Ode	Installation of 100MVA 132/33kV with 1No. incomer and 3No. outgoing feeders.
Osogbo	Installation of 300MVA 330/132/33kV transformer Installation of 100MVA 132/33kV Transformer
Ife	Installation of 60MVA transformer
Ganmo	Installation of 375MVA 330/132/33kV Transformer Installation of 100MVA 132/33kV Transformer Extension of SHONGA 132kV Lines 1 & 2 Bay
Ganmo-Ogbomosho	Extension of Ogbomosho 132kV Line 1 & 2 Bay
Ilorin	Installation of 100MVA 132/33kV Transformer
Akure	Upgrading of the 33kV bus bar from 250mm ACSR to 300mm aluminium pipe

### Completed Substation Projects

Ede	Constructed Ede 132kV Substation (completed on potential)
Oyo Substation	Constructed 1x60MVA 132/33kV Substation with 1No. incomer and 3nos outgoing feeders.
Sagamu	Constructed 1x60MVA 132/33kV Substation with 1No. incomer and 3 Nos outgoing feeders.

### Ongoing Substation Projects

Oba-Ile	Construction of 330/132/33kV Substation on Oba-Ile in Akure
Ilupeju-Ekiti	Construction of 132/33kV Substation
Ijesha-Isu Ekiti	Construction of 132/33kV Substation
Ikere-Ekiti	Construction of 132kV switching station
Akoko	Construction of 132/33kV 2X60MVA Substation in Akoko
Ilorin	Extension of Control Room complex
Ganmo	Extension of Control Room Complex
Egbe	Construction of 2x60MVA 132/33kV transmission substation
Shonga	Construction of 2X60MVA 132/33kV transmission substation
Ogbomoso	Construction of 2x60MVA 132/33kV transmission substation
Saki	Construction of 2x60MVA 132/33kV Substation with 2nos incomer and 6nos outgoing feeders

### Ongoing Transmission Line Project

Osogbo - Akure	Construction of 330kV Double Circuit line
Ihovbor - Akure	Construction of 330kV Double Circuit line
Akure	Construction of Akure/Ikere/Ilupeju/Ijesha 132kV DC line Akure 2X60MVA + 4x330kV line Bay extension
Osogbo-Ihovbor	Reinforcement of waterlogged tower base on Osogbo-Ihovbor 330kV line T251
Iseyin	Construction of Iseyin/Saki 132kV Double Circuit Transmission Line
Omu-Aran	Extension of new Egbe 132kV Lines 1 & 2 Bay

## Shiroro Region

The Shiroro Region of Transmission Company of Nigeria (TCN) covers two states; Niger State in the North Central and Kebbi State in the North West. It interfaces with three Distribution Companies (Discos): Abuja Electricity Distribution Company (AEDC), Ibadan Electricity Distribution Company (IBDEC) and Kaduna Electricity Distribution Company (KAEDCO).

### Completed Transmission Lines Projects

Shiroro	Installed 1No 330kV CVT #R4G (Abuja Line 1)
Jebba	Installed 330kV Circuit Breaker on Jebba/Shiroro Line 1 (J3R)
Kontagora	Re-erected collapsed tower T220 on 132kV Tegna-Kontagora Line
Kontagora	Re-conducted 132kV Tegna Kontagora/Yauri Line between Towers T240 to T247 and T37 to T38 and Amendment of slight bent cross arm on Tower T247
Shiroro	Installed GE 330kV circuit breaker on Shiroro-Jebba Line 1
330kV Gussase Triple-Point Switchyard Zungeru	Completed 330kV Line 1 Turn-In-Turn-Out at 330kV Triple-Point Switchyard comprising of 330kV Jebba-Shiroro-Zungeru Line 1

### Completed Transformer Installations

Kontagora	Rehabilitated 132/33kV 30/40MVA Transformer TR1 at Kontagora Substation
Yauri	Installed 33kV Earthing Reactor at Yauri Substation
Dogon Gari	Commissioned a newly constructed 2No. 33kV Feeder Hydropolice and 2 from Dogon Gari 2x60MVA 132/33kV Substation to a newly constructed 1x15MVA 33/11/0.415kV Injection Substation at Kainji under the Eligible Customer Power Supply Service Contract.
Jebba	Installed GE 330kV Circuit Breaker on Uli (B13)
Jebba	Installed Six (6) No. current transformers at 330kV Jebba Substation
Jebba	Installed 330kV Power Station Line 2 circuit breaker at 330kV Jebba Substation
Jebba	Installed six (6) No. current transformers on 330kV Unit 1 (T1A) circuit breaker Bay at Jebba Substation
Jebba	Installed 330kV circuit breaker on Bus Section Circuit Breaker Bay at Jebba Substation
Jebba	Installed 330kV Circuit Breaker at Jebba Substation
Jebba	Installed bus isolator on Jebba/Shiroro Line 1 (J3R) at Jebba Substation
Jebba	Installed 330kV Circuit Breaker on 330kV Oshogbo line 1 (J1H) circuit breaker at Jebba Substation
Jebba	GE CB Type GLX x 315 330kV on 2x105 Circuit K1J at Jebba Substation
Shiroro	Installed 2No. 330kV CVT (Abuja Line 2) to replace the damaged one at Shiroro Substation

### Ongoing Transmission Line Project

330kV Gussase Triple-Point Switchyard Zungeru	Stringing of Zungeru 330kV Line 2 to connect the Tripple-Point 330kV Turn - In -Turn Out comprising of 330kV Jebba-Shiroro-Zungeru Line 2
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## Benin Region

The Benin Region of TCN covers mainly Edo, Delta, parts of Ondo and Ekiti States. The Region interfaces with Benin Electricity Distribution Company (BEDC).

### Completed Transformer Installations

Delta IV	Commissioned 150MVA Inter -bus Transformer
Ihovbor	Rehabilitated 60MVA transformer

### Ongoing Transformer Installations

Ondo Work Cent	Installation of a 2x60MVA transformer
Benin Sub-Region	Installation of 2X300MVA 330kV transformer
Benin Sub-Region	Installation of 100MVA 132/21kV transformer
Effurun Work Center (Sapele)	Installation of 60MVA transformer
Ughelli Sub-Region	Installation of 18MVA transformer
Amukpe	Installation of 60MVA transformer

### Ongoing Substation Projects

Omosho Sub -Region	Construction of 2x30/40MVA 132/33kV Okitipupa Transmission Substation
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## KNOW YOUR SUBSTATIONS

# BIRNIN-KEBBI

## 330/132/33kV TRANSMISSION SUBSTATION

The Birnin Kebbi Transmission Substation, located in the state capital, is under TCN's Kaduna Region. The substation is a crucial part of the regional power transmission network. It has a rich history dating back to its establishment in 1989 under the Jebba generation station and its elevation to sub-region status in 2015.

This substation plays a pivotal role in transmitting bulk energy to three important transmission substations: Sokoto, Talata Mafara, and Birnin Kebbi Transmission Substations. These substations are essential for supplying electricity to distribution load centers, serving areas in Kebbi, Sokoto, and certain regions of Zamfara State. Additionally, the substation feeds the Kaduna Electricity Distribution Company, through eleven 33kV distribution feeders.

The infrastructure of the Birnin Kebbi Substation includes a 330kV switchyard with power transformers, a 75MX reactor, and 132kV transmission lines. It also features a dedicated building for control protection panels and a control room equipped with battery banks and chargers. The substation's total capacity is 330MVA, making it a vital component of the regional power transmission network.

Presently, the substation has a total number of 1No. 150MVA, 330kV and 60MVA, 132kV capacity transformers.

### Projects:

At the substation, there are several ongoing projects primarily aimed at improving the capacity of TCN within the region. Below are some of these projects and their stages of completion.

LOCATION	PROJECT	PROJECT SPONSOR
Birnin Kebbi	Installation of 100MVA 132/33kV transformer	World bank
Birnin Kebbi	Upgrading of 2x90MVA transformers in Birnin Kebbi Substation to 2x150MVA transformers	World bank
Sokoto	Construction of 2x330kV line bays at Sokoto 330kV substation	AFDB
Sokoto	Construction of 2x150MVA 330/132kV substation with 4x330kV bays and 2x60MVA 132/33kV with six (6) number outgoing feeders at Sokoto 330kV substation	AFDB
Sokoto	Construction of 2x60 MVA 132/33kV substation at Sokoto	AFDB
Yelwa yawu	Reinforcement of Yelwa Yawuri Substation with 1x60MVA 132/33kV transformer	AFDB
Sokoto	Construction of 50MVA 330/132/33kV substation with 4x330kV line bays and 2x60MVA 132/33kV with six (6) number 33kV outgoing feeders in Sokoto substation	
Birnin Kebbi	Construction of 1x150MVA 330/132/33kV substation with 8x330kV line bays and 1x60MVA 132/33kV with three (3) number 33kV outgoing feeders at Kalgo Substation	AFDB
Birnin kebbi	Construction of 2x60MVA 132/33kV substation at Fakon Sarki	AFDB
Birnin Kebbi	Construction of 330kV DC transmission line from Birnin Kebbi to Sokoto	AFDB
Birnin Kebbi	Turn-in turn-out on existing Birnin Kebbi to Sokoto 132/33kV SC line.	AFDB

### The Fire Incident

On Thursday, September 14, 2023, a fire outbreak at the substation affected two transformers, a 90MVA 330/132/13.8kV and a 60MVA 132/33kV, as well as the entire control room. Two transformers survived the fire and there was no loss of life.

### Restoration Efforts

TCN's in-house engineers restored the 150MVA and 60MVA transformers that were not affected by the fire within two weeks and also restored supply first to Sokoto State, through the Kaduna-Zaria-Funtua-Gusau-Talatan Mafara 132kV line on September 15, 2023, subsequently to Kebbi State and environs. The 132kV Birinin Kebbi - Sokoto line was also brought back to service to increase bulk electricity transmission in that axis. Full restoration was achieved on September 29, 2023, at approximately 9:20 am.



Installation of 100MVA transformer at Birnin kebbi Substation



Transformer accessories at the substation

# Regulatory Compliance: New Market Outlook in TCN

Engr. Dr. Adesola O. Oladeji

**T**he Transmission Company of Nigeria ("TCN") is a vital entity in the Nigerian Electricity Supply Industry ("NESI") value chain, owned by the Federal Government of Nigeria ("FGN") and saddled with the responsibility to perform the functions of transmission and system operations of the high voltage network amongst its numerous functions.



Engr. Dr. Adesola O. Oladeji  
AGM (Regulations) ISO

Whilst, indeed the sector awaits its reform, the question that comes to mind is what would be the implications of the reforms for national security, economic and electricity market growth and development? However, the Electricity Act ("EA") 2023 otherwise referred to as the 'grand rules' for the operation of the power sector and its reforms has been signed as a consequential document. This update/information will help to understand how Compliance priorities can put TCN at risk now and in the next electricity market stage.

("TCN") as a licensee under section 64(1) of the ("EA") 2023, is obliged to comply with the provisions of its licence terms and conditions, regulations, orders, codes, directives, guidelines, manuals and industry documents issued by the Nigerian Electricity Regulatory Commission ("NERC").

In the same vein, pursuant to section 72(5) of the ("EA") 2023, TCN is obliged to provide information, Reporting Compliance Obligations and Statutory Responsibilities to the Nigerian Electricity Regulatory Commission ("NERC") on a periodic basis, in such form (template) and detail as determined by "NERC".

In the newly enacted ("EA") 2023, failure by ("TCN") to meet these compliance requirements under the law attracts substantial sanctions, hence, departments in ("TCN") should be abreast of their compliance obligations and applicable sanctions for non-compliance in view of the current enforcement drive by ("NERC").

The Regulatory And Compliance Department of TCN, has the mandate to intimate all departments in the Company of their obligations to file statutory/regulatory returns/reports to NERC at specified intervals (due dates).

Upon satisfaction by NERC that a licensee has contravened, likely to contravene or is contravening any provisions of its licence

conditions, Section 76(4) specifies a penalty for each day that the licensee is in default of compliance. Also, pursuant to section 215 of the ("EA") 2023, any person who violates, attempts or abet any regulatory documents or other subsidiary legislation issued under the ("EA") 2023, within a specified subsidiary legislation commits an offence and liable to a fine, imprisonment or both. However, in case of a continuous offence, an additional fine on daily basis applies as the offence continues. Interestingly, upon false declaration of information, an offence has been established and a specified fine, imprisonment or both specified for a term apply.

## Implication of an Offence

Where a contravention of the law has been established by/on ("TCN"), it is adjudged that an offence has been committed by ("TCN") and any principal officer of the ("TCN") responsible for the purview of the offence is deemed to have committed the offence and liable to be punished accordingly unless the officer can show that the offences was committed against his/her counsel (not an act of negligence).

## What Next?

Going forward, the business before us is regulatory dependent and for ("TCN") to thrive under this new dispensation, the understanding of the regulatory tools is important because standards and regulations are building blocks to keeping pace effectively in the growing Nigerian Electricity Market ("NEM").

Regulation compliance should be an integral part of all stakeholders ("TCN" Staffers inclusive) in the Electricity Market in order to drive the Market system. Summarily, Regulation is not enforcing the reluctance of the rules to be obeyed but enforcing the willingness of rules to be obeyed.

As we continue to face growing industry-wide reforms and development, it is imperative that we adopt a balanced and sustainable approach to the regulatory mechanisms.

## Conclusion

Conclusively, the punitive sanctions for non-compliance are pointers for the need to take reporting compliance obligations more seriously and/with a sense of responsibility. With the anticipated reforms in the ("TCN"), mitigation or avoidance of sanctions associated with regulatory risks can be achieved through regulatory compliance to the various industry documents provisions.



# Women In Engineering:

## Breaking Gender Barrier In A Male Dominated Profession

By Maimuna Isah- Ladan

In 2014, Women Engineering Society (WES) in the United Kingdom, launched a global awareness campaign and declared 23rd June of every year as International Women in Engineering Day (INWED), to celebrate and raise the profile of women in engineering. Since the launch, the campaign holds every year to celebrate the outstanding achievements of female Engineers across the globe as well as to encourage more young women to consider engineering as a profession.

The Implicit Association Test (IAT) carried out between 1998 and 2010 with results obtained from over half a million people around the world shows that people subconsciously connect men with science and women with art. This unconscious stereotype also has negative impact on the performance of women in male dominated fields such as engineering. However, women who persist are able to find fulfilling and rewarding experiences in the engineering profession.

Over the years, a lot of women have shown interest in men dominated professions and it is obvious that the world has moved past the days when only men shoulder the engineering burden. Today, a lot of women have not only ventured into engineering profession, but are fast becoming sources of inspiration and role models to their counterpart and the girl child at large.

Most of these women are very proud of their achievements as they are making exploits and redefining the profession. For instance, in the Transmission Company of Nigeria, there are a number of female Engineers who are breaking the barriers.

One of such persons, Engr. Adongari Yakubu, in a chat said, "I

love Engineering. I like the fact that it challenges me. It's a very interesting job and I like the fact that it makes life easier for everyone. As a female Engineer, you always stand out. Right from university days, the male to female ratio was heavily disproportionate with 10 women around 70 men. So, I enjoy the challenge that comes with it."

Similarly, Engr. Talita maintained that. "Engineering is something I am very passionate about. It is a very interesting

job and I can't wait to see more females venture into engineering. My advice for younger female Engineers trying to get into the industry is that you have to be willing to stand out. People will respect you when you are reliable, accountable and always deliver what is expected of you."

Halima Muhammad, another female Engineer said that, "the thing I have enjoyed most about working in a male dominated career is actually the support I get from my male colleagues. They are so helpful and supportive. I don't see being an

Engineer as challenging because to me, women are equal to the task. I am happy to carry my equipment all the time but will gladly accept help from someone else when it is offered. I feel like there are many assumptions about female engineers as regards lack of competence, it makes me determined even more to prove them wrong."

On her part, Engr. Blessing Tanimu Dodo noted that, "working as an engineer in TCN has unlocked so many potentials in me. It has made me discover myself and set out goals to achieve things I wouldn't have done before. There is no denying that the field of engineering can be a bit of a 'man's world'. The best way to navigate is to embrace the work and remain unfazed."

*Most of these women are very proud of their achievements as they are making exploits and redefining the profession. For instance, in the Transmission Company of Nigeria, there are a number of female Engineers who are breaking the barriers.*



## We celebrate our AMAZONS TCN female engineers



Engr. (Mrs) Nafisa Ali, General Manager, (System Operations), CHQ



Engr. (Mrs) Jane Okemini, General Manager, (Monitoring and Evaluation), CHQ



Engr. (Mrs) Funmilayo Ekoko, Asst. General Manager (Akangba Sub-Region)



Engr. (Mrs) Zuwairah M. Abba, Asst. General Manager (AFD-Project) PMU



Engr. (Mrs) Whitney Oko, Principal Manager (Substation Project) CHQ



Engr. (Mrs) Zainab Ahmed, Principal Manager (JICA Project Coordinator) PMU



Engr. (Mrs) Tonbara Egekwu, Principal Manager (SCADA Project Coordinator) PMU



Engr. (Mrs) Omobola Sobo, Principal Manager (World Bank Project Coordinator) PMU



Engr. (Mrs) Juliet N. Ukomadu, Principal Manager (Transmission) Afam Sub-Region



Engr. (Mrs) Josephine N. Madu, Senior Manager (Lines Project) CHQ



Engr. (Mrs) Ibe Onyinye, Manager (Civil Project) CHQ



Engr. Adengari Yakubu, Manager (Electrical Maintenance) Kaduna Region



Engr. (Mrs) Ramatu Obansa, Asst. Manager (Civil Project) AFDB-PMU



Engr. (Mrs) Ladi Briston Igbinoba, Asst. Manager (Civil Project) World Bank-PMU



Engr. (Mrs) Tonia Ekeh, Asst. Manager (Substation Resettlement) CHQ



Engr. Talita Mele, Asst. Manager (Electrical Maintenance)





Engr. (Mrs) Blessing Tanimu Dodo, Asst. Manager (Electrical Maintenance), Kaduna Region



Engr. (Mrs) Salamatu Danmagaji Bitrus, Asst. Manager (Civil Project), AFDB-PMU



Engr. (Mrs) Janada Ijudigal  
Asst. Manager (Civil Project) CHQ



Engr. (Mrs) Odigie Ngozi Etuosisochi  
Asst. Manager (Elect) Lagos Region



Engr. Hannatu M. Sani, Asst. Manager  
(PC & M) Bauchi Region



Engr. Chioma A. Odi, Asst. Manager  
(Project) AFDB-PMU



Engr. Asake B. A., Asst. Manager  
(PC & M) Ayede Sub-Region



Engr. Ekonye L. A., Asst. Manager  
(Electrical Maintenance)  
Ayede Sub-Region



Engr. Bilkis A. Ismail, Asst. Manager  
(SCADA Project) PMU



Engr. Bamidele Oladunni, Asst. Manager  
(System Operation) Ayede Sub-Region



Engr. Orhokomua Efetobore, Asst.  
Manager (System Operation)  
Benin Region



Engr. Amina Ahmed Mimi, Asst. Manager  
(World Bank Project) PMU



Engr. (Miss) Joyce U. Andem, Asst.  
Manager (PC & M) Ayede Sub-Region



Engr. Maryam Rafiu Raji, Asst.  
Manager (System Operation)  
Shiroro Region



Engr. (Miss) Clara Chidinma Ogu, Asst.  
Manager (PC & M) Port-Harcourt Region



Engr. (Mrs) Sarah Omo Adole-Jones,  
Officer I (Substation Design) CHQ



Engr. Halima Muhammed,  
Officer I (PC & M), Kaduna Region



Engr. Ekweozor Ogechukwu Valerie  
(Electrical Maintenance) Port-Harcourt  
Region



Engr. Obiechina Uchenna Rita, Officer II  
(Electrical Maintenance)  
Gwagwalada Sub-Region



Engr. Bekee Nkechi Candace,  
(PC & M) Aba Sub-Region



# Explaining the Role of Electrical Maintenance Department in TCN

By Zainab Shehu



Electrical Maintenance engineers at work

Within the multifaceted landscape of the Transmission Company of Nigeria (TCN), various units play very distinctive roles and collectively, they enable the company to deliver electricity more efficiently. Among these units is the Electrical Maintenance Department, commonly known as EMD.

EMD operates under the Transmission Service Provider (TSP) Business unit of TCN and carries the vital responsibility of installing and maintaining high-voltage equipment, which includes power transformers and an array of switchgears like circuit breakers, instrument transformers, isolators, lightning arrestors, and other auxiliary devices. Its role is quite instrumental in enabling the effective and efficient transmission of bulk power to distribution load centers nationwide.

In a recent interview, Engr. Abraham J. Malgwi, the Manager (electrical) in the Kaduna sub-region, emphasized the critical role of power transformers, circuit breakers, isolators, instrument transformers, protective relays, and busbars within TCN's scope. He noted that the malfunction or loss of any component of these equipment would impede TCN's capacity to carry out its duty effectively, ensuring the optimal functioning of these equipment therefore thorough strict adherence to scheduled maintenance is of utmost importance.

The Electrical Maintenance Department performs both preventive and corrective maintenance on the components to ensure they continue to operate in accordance with their specifications. This encompasses physical inspections, functionality tests, general tests, and condition monitoring, all aimed at confirming the stability and reliability of the equipment to facilitate the continuous and efficient delivery of bulk power to distribution load centres.

Significantly, power transformers are among the most critical assets in the electricity transmission process. EMD engineers install, maintain, and comprehensively test the equipment to ensure it can operate optimally. The

transformer tests include ratio tests, short-circuit tests, magnetizing current analysis, magnetic core balance, winding resistance assessments, continuity checks, insulation resistance tests, dirana tests, dielectric oil evaluations, DGA tests, and more. The transformer tests are the same for all capacities, including 330/132/33kV, 132/33kV, and 33/0.415kV variants.

For the switchgears (330kV, 132kV, 33kV), the EMD meticulously conducts maintenance to ensure they efficiently play their roles in controlling, protecting, and isolating electrical equipment. Hence, inspection, functionality tests, and other assessments, in addition to condition monitoring, are diligently carried out to uphold the optimal performance of these systems, promoting effective and efficient power transmission. The EMD also undertakes the maintenance and repair of various electrical office appliances integral to daily operations, such as sockets, lighting points, and low-voltage wiring.

As part of the skilled engineering workforce at TCN, the EMD uses advanced testing equipment, such as Omicron, Dirana test kits, Kellman Transport X DGA test kits, Megger Test Kits, among others. The EMD department is a vital contributor to TCN's operations.

# Empowering the Kano Region: A Closer Look at Power Dispatch

By Suleiman Hassan



Engr. Adamu Bello Ibrahim, PM (System Operations),  
Kano Region,

In an exclusive interview, Engineer Adamu Bello Ibrahim, the PM System Operations of the Kano Region, spoke on the intricate world of power dispatch, giving profound insights into the critical role it plays in ensuring the supply of bulk electricity to distribution load centres in the Kano axis.

Engineer Ibrahim elucidated on the complex process of power dispatch in the Kano Region, underlining the challenges posed by Nigeria's insufficient power generation.

He said, "Power dispatch involves the efficient allocation of available electricity within the grid to maintain system stability. The power system involves three key components: generation, transmission, and distribution. Bulk power received in TCN substations is transmitted to distribution load centres of the Distribution Company in collaboration with the Distribution Companies (DisCos) who nominate the quantum of power they require a day ahead, based on which power is allocated to them based on feeder bands."

Discussing the coverage area, Engineer Ibrahim said that,

"within the Kano Operations Region, TCN manages 66 number 33kV feeders and transmits bulk power through the 132kV Gazoua line. The coverage area of these 33kV feeders extends across Kano, Jigawa and Katsina States, and some parts of Azare and Nguru in Yobe State."

According to him, "The power industry relies on a robust collaborative relationship between the three major players viz: Generation Companies (GenCos), Transmission, and Distribution Companies (DisCos). GenCos and transmission interact at the point of offtake from the generation stations, while load allocation is manned by the National Control Centre. TCN takes the bulk electricity to Distribution load centres which is the interface point. Strong partnerships within the value chain are pivotal, as the smooth operation of one sector is interdependent on the others".

Preventing power outages and system failures in TCN is of utmost importance, shedding light on the measures adopted by TCN, he said, "System faults can arise from natural or man-made factors, and contrary to common belief, they can be triggered by generators, transmission, or distribution companies. To pre-empt these faults on the part of TCN, we rely on regular inspections, maintenance, equipment upgrades, and the integration of new technologies to enhance efficiency and stability."

Speaking on some of the challenges confronting Kano Region, Engineer Ibrahim said "We encounter numerous challenges regularly. For instance, some equipment requires on-site operation due to limited remote control, and this can be hampered by adverse weather conditions. Despite Kano's status as an industrial hub, certain transformers and breakers cannot be operated remotely. This is also a challenge. Allocation challenges also surface, with industrial areas demanding more power at specific times of the day, while residential areas have their unique requirements".

On the way forward, Engr. Bello noted that TCN had commenced the digitization of all its substations nationwide, SCADA project execution, with ongoing massive investment in the grid alongside the new technologies being integrated widely in all TCN substations. As the projects are concluded, most of the challenges would be overcome, he said.

# Insight on Power Outages

By Grace Sambe-Jauro

In an exclusive interview, Engr. Abba Abdullahi, the Regional Operational Coordinator, Bauchi Region of the Transmission Company of Nigeria (TCN), provided insight on outages, types of power outages, and the procedures that must be taken before and after these outages.

According to him, there are four primary types of power outages within TCN;

- i. Forced Outage occurs without control, often due to equipment failure, and requires immediate attention.
- ii. Emergency Outage are unplanned and are initiated to protect the grid's stability during critical situations.
- iii. Urgent Outage, like emergency outages, are unplanned but are executed swiftly, with a focus on grid protection.
- iv. Planned Outage are scheduled in advance, allowing for proper notification and preparation.

The procedures for addressing these outages vary depending on their nature.

In the case of a forced outage, notifying supervisors, maintenance personnel, and the National Control Centre (NCC) is the initial step.

For planned outages, extensive coordination with the Distribution Companies (DisCos) is required to inform them of the outage. This is to enable them provide their customers with a minimum two-week notice. The NCC plays a pivotal role in arranging the energy supply during planned outages.

Maintenance work during outages may require specific permits, such as work permits or work and test permits,



Regional Operational Coordinator, Bauchi Region, Engr. Abba Abdullahi

depending on the nature of the tasks.

Engr. Abba Abdullahi emphasized the importance of the "N-1" concept, which ensures redundancy and backup in the power system. If one component, such as a transformer, undergoes maintenance or fails, the system should have a spare to prevent energy loss. This concept helps maintain a consistent energy supply to consumers during planned outages.

He further explained that the duration of each maintenance exercise is primarily determined by the complexity and scale of the job. Routine preventive maintenance, especially if it's minor, tends to have shorter downtime. However, the magnitude of the maintenance task is a critical factor influencing the length of the outage.

Engr. Abba Abdullahi's insights provide valuable clarity on the intricacies of power outages and maintenance procedures within TCN, highlighting the significance of coordination and preparation in ensuring a reliable power supply for consumers.

**LEADERSHIP** is not about being **IN CHARGE**.  
It is about taking care of those in  
**YOUR CHARGE**



# Benin Region Gets Anti-Corruption and Transparency Unit

By Chigozie Clement

**T**he General Manager (Transmission) of Benin Region, Engr. I. C. Okpe has called for the collective action in the fight against corruption. This plea was made during the inauguration of the Anti-Corruption and Transparency Unit (ACTU) in the Benin Regional office of TCN on Wednesday, July 26, 2023.

Addressing the forum, Engr. Okpe stated that corruption extends beyond financial misappropriation, and that it encompasses wrongdoings in the discharge of duties, including misallocation of time, misuse of equipment, lack of commitment to one's duties, among others. He stressed the critical need for collective efforts in combatting the multifaceted problem.

Also speaking at the event, Mr. Abdullahi Musa Balarabe, the acting Chairman of ACTU (GM F&A), urged the newly appointed committee members not to betray the trust vested in them. He also acknowledged that contemporary corruption takes various forms, leading to increased business costs, decreased foreign investments, erosion of trust, and stifling of creativity.

Represented by Mr. Okoro Raymond, the Senior Manager (F & A CHQ), Mr. Balarabe affirmed that combating corruption is a

collective responsibility as well as a moral imperative. He highlighted government's interest in ACTU's activities and its role in ensuring accountability and fostering growth across government owned agencies.

Mr. Nwaobilor Emmanuel, the representative of ICPC at the event emphasised that ACTU's mission is essentially to discourage and expose corruption within Ministries, Departments, and Agencies (MDAs). He encouraged the adoption of ACTU's principles, including processes, procedures, and the development of a code of ethics within the Company. Nwaobilor, charged the newly inaugurated ACTU members to uphold high ethical standards and work together as a team to promote discipline and accountability within TCN. He emphasized that the fight against corruption yields result when it is done collectively.

Responding, the AGM (T/S) and Chairman of the newly inaugurated unit, Engr. M. M. Saidu, expressed gratitude on behalf of the committee for the opportunity to serve in Benin ACTU. He urged committee members to approach their new responsibility with understanding and a determination to excel, noting that the right mind-set was important in achieving the goal of the Unit.



Some TCN Headquarters ACTU officials and the newly inaugurated members of Benin Chapter of ACTU in TCN

# DID YOU KNOW?

- That the nation's transmission grid is not radial, as is often said. TCN has several 330kV network loops and has equally executed several double-circuit transmission lines, both enhancing redundancy and reliability. Some of the transmission line loops include:

Benin - Osogbo - Lagos - Omotosho - Benin  
Benin - Ajaokuta - Abuja - Shiroro - Jebba - Osogbo - Benin  
Alaoji - Onitsha - New Haven - Ugwaji - Ikot Ekpene - Alaoji  
Alaoji - Afam - Ikot Ekpene - Alaoji  
Benin - Ajaokuta - Abuja - Shiroro - Kaduna - Jos - Makurdi - Ugwaji - New Haven - Onitsha - Benin

- That transmission line loops, along with double circuit lines, provide redundancies in the grid, enhancing its stability and reducing the risk of bulk power disruption. This strategic infrastructure development is crucial for ensuring reliable power supply in Nigeria.
- That, put together, TCN has over 175 ongoing substations, transformer, and transmission line projects, and they are at various completion stages nationwide. There are about 40 ongoing greenfield substation and control room projects and about 45 new transformer projects. Several transmission lines have either been re-conducted or are ongoing. TCN equally has almost 90 transformer-related projects across its ten regional offices. Some of the transformers have been completed, while others are undergoing installation or reinforcement.
- That for TCN, maintaining the integrity of power infrastructure is paramount through scheduled maintenance, regular inspections, prompt repairs, and the implementation of proactive preventive maintenance strategies. Regular inspections have helped detect wear and tear, vulnerabilities, or emerging issues for prompt attention. Also, minor deviations from optimal functioning equipment are identified and corrected. This approach has helped prevent minor issues from escalating and ensures the overall efficiency of transmission infrastructure nationwide.

14, Zambezi Crescent, Maitama, Abuja.



TCN\_NIGERIA



TRANSMISSION COMPANY OF NIGERIA



[www.tcn.org.ng](http://www.tcn.org.ng)

# Incivility

## And You



**I**ncivility encompasses various disrespectful behaviours, from mockery and belittlement to hurtful teasing, offensive jokes, and texting during meetings.

In a study on the impact of incivility, it was discovered that incivility decreased motivation, recording 66% reduced work efforts, while 80% of persons wasted time worrying about how they were treated, and 12% left their jobs. It was also discovered that it can cost a company an estimated \$12 million annually.

If incivility is costly, why does it persist? Stress and the misconception that appearing less leader-like is one reason advanced by researchers.

However, a study showed that civil individuals were twice as likely to be seen as leaders and performed better. Civility pays off as it combines warmth and competence, friendliness, and

intelligence.

Even if you're not the target, witnessing incivility affects you. In a small group, a test was conducted on the impact of a peer insulting a team member. The witnesses' performance impact was a decrease in significantly decreased. Incivility is contagious, making us carriers by merely being around it. How can you promote respect and lift people up?

Small actions can make a big difference. Showing gratitude, sharing credit, attentive listening, asking humble questions, acknowledging others, and smiling all have a positive impact. In more civil environments, productivity, creativity, and well-being thrive when these happen. We can be more mindful and take actions to lift others up, whether at work, home, online, in schools, or in our communities.

In every interaction, consider who you want to be.



Late Mr. Antai Bassey, AM (HSE),  
Akangba Sub-Region



*Words can't wipe away our tears  
Hugs won't ease our pain  
Memories of you  
will live in our hearts  
Adieu...!!!*



Late Mr. Garba Sule Zango, Officer III (MVD)  
Katsina Sub-Region





## IGBO-ORA: MYSTERY OF THE DOUBLES

By Josephine Akaakar

"Double for your Trouble", a popular phrase fondly said to a person whose prolonged tough times become times of celebration, the travailing pangs of a mother in labour, finally birthing two children at once from one pregnancy best illustrates this phrase.

Twin births are delightful to some for its rare beauty, while also a dread to others for its divine unsolved mystery. Igbo-Ora, makes one believe that they have unlocked the secret to twin births in Nigeria and probably the world at large.

Igbo-Ora, a small town 80 kilometers from Lagos, is a place in Oyo state with a simple way of life, made up of mostly farmers and traders. It is considered the twin capital of the world, as more twins are born there than anywhere else in the world, walking through the town might make you feel like your eye sight has a double lens, as almost every house has at least one set of twins who are predominantly identical.

Igbo-Ora is one of the most extraordinary discoveries in Nigeria. While Europe boasts of about 16 twins for every 1,000 births and the United States of about 33 for every

1,000 births, statistics from a study by British gynecologist, Patrick Nylander, between 1972 and 1982, recorded an average of 45 to 50 sets of twins per 1000 live births in the South-West.

Researchers have long noticed that the Yoruba tribe who predominantly reside in Nigeria and different parts of the globe, is a world leader in delivery of twins.

A 1989 study in the Journal of Reproductive Medicine noted that twin delivery rate of the Yoruba people at the time was more than four times higher than that of Caucasians.

In the Yoruba language, twins are called "Ibeji" (Mobolade, 1997, p. 14). The first-born twin is usually named "Taiwo" and the second is named "Kehinde." In Yoruba traditional religion, twins are believed to be under the protection of Sango, the God of thunder and lightning. The twins were highly looked after and treated with honor.

The communities in which they were born, for example, honored twins with a monthly feast. The Yoruba's also

believed that twins had supernatural powers that could increase their parents' wealth.

However, if twin siblings were neglected, one or both of them would become severely ill and potentially die. If this happened, misfortune would be brought upon their parents and the entire community so they believe.

Twins were just as important in death as they were in life. When one or both of the twins died, an "Ibeji" statue would be carved out in their memory. The parents would treat these statues as if they were the living children by singing to them as well as feeding and caring for them. Parents that failed to take care of the Ibeji statues would suffer consequences such as poverty and illness (Mobolade, 1997).

Ironically, Igbo society viewed twins as a bad omen sent by the "gods." They considered twins as supernatural beings that could bring devastation upon society.

In Chinua Achebe's acclaimed novel, *Things Fall Apart*, "I learned that the Earth goddess had decreed that twin, were an offence on the land and must be destroyed, and if the clan did not exact punishment for an offense against the great goddess, her wrath was loosed on all the land and not just on the offender" (Achebe, 1994, p.125).

As a consequence, whenever twins were born, their parents had to leave them at the "Evil Forest" to die. According to Achebe, "twins were put in earthenware pots and thrown away in the forest" (Achebe, 1994, p. 61).

Admist all these assorted beliefs and myths, the people of Igbo-Ora community claim that, there are certain foods a woman can eat that can make her to conceive twins.

Numerous works have shown that the tuber food popular among Yoruba women, especially the peelings, contains a very large amount of chemical substances that induces the birth of twins. These women have a disproportionately large amount of these chemicals in their system and this encourages the release of more than one egg. There is enough reason to believe in this theory.

However, the leader of the Igbo-Ora community has linked the births of twins to the soup they eat with these tubers saying; "We eat a lot of the okra leaf or Ilesa soup. We also eat a lot of yams and these diets influence multiple births."

However, no scientific explanation or evidence can prove that yam consumption can cause multiple births, when one of the mothers of Igba-Ora community was asked the reason for her twin births, she said, "It is the work of God... and the food that I eat, like Amala with Ilesa soup". The confidence of such a mother begs this question, could peels of tuber foods, okra leaf or Ilesa soup be the secret to the high rate of twin births in Igbo-Ora?

A lifetime of pondering shrouded in mystery still remains the order of the day in this regard for the everyday woman who is not a native of this community.

A symbol of how much twins are celebrated in this community is found in the special Igba-Ora twin festival which has been marked consistently in the last 12 years.

The year 2022 event, involved more than 1,000 pairs of twins, a delightful sight to behold, yet still an enigma entrenched in layers of thrilling bewilderment.



Participants at the 2022 Igbo-Ora Festival

## Photorama



The Lagos Region of TCN, held a Regional Joint Advisory Meeting with Executives of the National Union of Electricity Employees (NUEE) at the NAPTIN Training Centre, Lagos. Issues discussed centred around staff welfare and the newly signed Conditions of Service.



TCN Health, Safety & Environment (HSE) Department of TCN recently organised a two-day awareness programme for staff of the Kaduna Region within the regional office complex. The event focused on emergency evacuation drills and procedures to follow in emergency cases.

The AGM, Occupational Health and Safety (OH&S), Mr. Ahmed Rufai Ibrahim conducted a session on job hazard analysis, providing valuable insights into identifying and mitigating workplace hazards as well as first aid requirements for different kinds of accidents.



The Health, Safety & Environment (HSE) Department in the Kano Region of TCN recently observed a Safety Awareness Week 2023. The event, which was held in conjunction with officials from Kano State Fire Services featured lectures and practical sessions showing how to handle fire incidents without jeopardising one's life. As part of the safety week programme, staff of the region participated in a two-kilometer walk, which is an important aspect of daily living that promotes fitness and healthy living.





## Awards and Conferments



Presentation of Excellence Award to the Executive Director, (F&A), in recognition of his outstanding leadership and unwavering commitment to the nation's progress.



Award of Excellence to Mr. Ibrahim Musa, GM (Accounts), in recognition of his selfless services and unwavering commitment towards betterment of youth and student welfare in Borgu Emirates



Engr. Abubakar Gwadabe, General Manager, (Procurement), on his conferment as Fellow, Nigerian Institution of Procurement Engineers (NIProcE)



Mr. Umar Abubakar, AGM (F&A) MO, awarded 1st Runner-up Net Sponsor Category at the 1st NESI Golf tournament



Mrs. Stella Ejikonye, Principal Manager, (Public Affairs), on her conferment as Fellow, Nigerian Institute of Social Media Analyst (NISMA)



Julia Ogbeche, Assistant Manager, (Public Affairs), on her conferment as Fellow, Nigerian Institute of Social Media Analyst (NISMA)

# TCN Lagos Region Holds Regional Joint Advisory Meeting with SSAEAC

By Tosin Olasehinde



Engr. M.A. Hassan, and SSAEAC Executives during the meeting

The executives of the Senior Staff Association of Electricity and Allied Companies (SSAEAC) at the Lagos Regional office of TCN, recently, held a Joint Advisory meeting with the Lagos Regional Management of the company to address industrial issues and other concerns within the

region.

Speaking at the meeting, Comrade Michael Edoamodu, the Deputy General Secretary (West) of SSAEAC, commended TCN's management for achieving the one-year milestone of National Grid stability. He urged staff to continue to diligently contribute their quota to the company's growth.

Also contributing, Engr. M.A. Hassan, the representative of the General Manager (T), lauded TCN management for providing Personal Protective Equipment (PPE) to technical staff and supplying them with enough mega testing equipment, and much more.

Additionally, the Manager of Nursing, representing the Manager (Medical) at the meeting, announced the recent recruitment of five new employees for the TCN Clinic in Ijora, including two nurses, two pharmacists, and one clinic attendant. The meeting served as a platform to discuss pressing issues and offer recommendations for resolution, with the aim of improving operations and staff welfare within the TCN Lagos Region.



Members of SSAEAC and TCN, Lagos Region

# Embracing the 'R' Word in Stepping Aside: Retirement Unveiled

For many Civil Servants, the mere whisper of 'Retirement' evokes a sense of heartbreak. The allure of consistent payments (salary) and prestigious positions makes leaving the service a daunting prospect.

However, let's face it – just like any product, we all come with an expiration date, and the day we received that appointment letter marks our manufacturing day.

Have you ever really considered that date? What's your game plan for when the time comes? Before you dismiss it as a distant future, remember that, much like receiving that appointment letter, time flies. I still vividly recall the day I got mine, and now, years have swiftly passed in service.

Here's the reality check: some Directors bid farewell empty-handed, while junior staff retired with jubilation. Don't find yourself ensnared in the retirement web; it's time to start preparing. Don't be caught napping – let the preparations begin!"

"Strategic Steps for a Smooth Retirement Journey:

- **Calculate Your Retirement Date:** Know the exact day, month, and year you will retire. The compulsory retirement age is 60 or after 35 years of pensionable service, whichever comes earlier.
- **Monitor Your Pension Account:** Regularly fund your Pension Account; don't overlook it until retirement. Check your balance, raise alarms if necessary. It's your right!
- **Activate National Housing Fund:** Ensure your NHF account isn't dormant; inquire about deductions made monthly.

- **Invest in Insurance:** Secure an insurance package with a reputable company for as low as 5,000 monthly. This can be a valuable resource during the pension benefits processing period.

- **Cooperative Society Participation:** Join a reliable cooperative society at work. Avoid unnecessary borrowing to protect your financial stability.

- **Avoid Ponzi Schemes:** Steer clear of Ponzi schemes; they can jeopardize your retirement plans.

- **Set Realistic Goals:** Establish achievable goals every 5 or 10 years. Invest in these goals wisely.

- **Invest in Property:** Secure a roof over your head. Acquire land and develop it gradually. Relying solely on your children may not be a foolproof plan.

- **Acquire Skills:** Learn skills related to your post-retirement business. Avoid idleness, as it may lead to health challenges.

- **Live Within Your Means:** Avoid extravagant living; civil service salaries may not support such a lifestyle.

- **Document Management:** Keep all your documents in order. They'll be crucial for claiming your benefits.

Comrades, time is of the essence! Your retirement date is approaching with every passing day. Start preparing now, not tomorrow." Procrastination has its consequences.

**"There is a whole new kind of life ahead, full of experiences just waiting to happen. Some call it 'retirement.' I call it bliss."**

**–Betty Sullivan**



## Retirement



Mr. Isah Mohammed, General Manager, (Audit)  
CHQ



Mr. Joseph Ciroma, General Manager,  
(Project Coordination) CHQ



Engr. Ogagavworla Benard Ochuko, Regional Operation  
Manager, (ROM), Kano



Mr. Adah Ochejenu, Senior Manager (HSE),  
CHQ



Mr. Abdullahi Iliyasu, Manager (Stores),  
Kano Region



Mr. Azi Ibrahim Yaro, Manager, (System Operations),  
Jos Sub-region



Mrs. Illori Yemisi, Senior Manager (F&A),  
Ayede Sub-Region



Mr. Ayuba Tsangaya, Officer IV, (MVD),  
Jos Sub-Region

# Know the warning signs for BRAIN INJURY

**T**raumatic brain injury is a major public health problem in Nigeria, as it could be associated with long term and life long deficits. Unlike other parts of the world, in our country, motorcycles are possibly the main cause of this injury. Unfortunately, we do not have a national epidemiological data base yet to know whether it is caused by head trauma such as domestic abuse, contact sports, workplace accidents, car crash, loss of oxygen, or poisoning. Even if it "might be nothing", you should always get potential brain injury checked by a doctor immediately. When you suspect someone may have brain damage, look for the following warning signs. You might save someone's life.

## Loss of consciousness

The most obvious warning sign of brain injury is passing out from head trauma, lack of oxygen, or stroke. If someone loses consciousness from a blow to the head, it means their brain has been jolted inside of their skull enough to interrupt function (a concussion). A concussion, even if seemingly mild, means they need medical attention to be sure the damage is not severe. Athletes in particular who have suffered a concussion should be removed from the field immediately to avoid compounding the damage.

Brain injuries occurring from lack of oxygen (hypoxia or anoxia) can occur from choking, suffocation, drowning, cardiac arrest, or stroke. If the brains supply of energy is interrupted, act quickly. Brain cell damage from lack of oxygen is often irreversible and widespread. CPR (cardiopulmonary resuscitation) can stall for time in the case of someone who is not breathing or whose heart has stopped, but getting emergency medical care immediately is critically important.

## Confused state

Victims of a brain injury often show symptoms of confusion, slow response time and or amnesia. If you suspect someone may have a brain injury, watch for unusually disoriented or fuggy behavior. An injured person may repeat themselves, say things that don't make sense, take long time to respond, be atypically forgetful or temporarily amnesiac, be able to recall basic information such as their names or have no memory of what happened to them (retrograde amnesia).

## Imbalance and illness

Nausea and a lack of balance/coordination often occur when someone's brain is injured. Depending on the part of the brain affected, and number of other physical symptoms like weakness, dizziness, vomiting, blindness, paralysis or worse could occur as well.

## Eyes unusually dilated or dilating unevenly

This is why first responders often check a patients eyes with a flashlight. Uneven or abnormal pupil size means the brain is not adjusting them correctly. Uneven pupil dilation indicates shock and damage to the brain and requires immediate medical evaluation.

## Change in personality or mood

Uncharacteristic anxiety, depression, mood swings, or unusual behavior or mindset are concerning symptoms for someone who has suffered a brain injury. Altered personality and mood may indicate more subtle or long term brain damage that needs to be addressed such as cumulative damage or an unnoticed buildup of blood in the brain (hematoma).

## Late symptoms

Note that symptoms of brain injury may not appear right away. If someone sustains a blow to the head or other damage to their neurons, it might take some time before the damage becomes apparent. One trait of brain injury is that sometimes the affected brain cells die or degrade over time after the trauma actually occurs. Keep monitoring for new symptoms or concerns even after the initial danger of a brain injury seems to have subsided. The brain is a complex organ and may take longer to recover than you might expect. It is especially important to protect a brain injury victim from new injuries while they are recovering.

## Multiple injuries

Having a history of head trauma makes the risk for getting future brain injuries like multiple concussions or other head injuries more serious. Multiple concussions or other head injuries are more devastating to the brain than a simple injury, cumulative damage can compound the damage. If you know that someone has had a brain injury in the past, be extra vigilant about any new damage and seek medical evaluation immediately.



## Voulez-vous apprendre le français?

Do You Want to learn French?

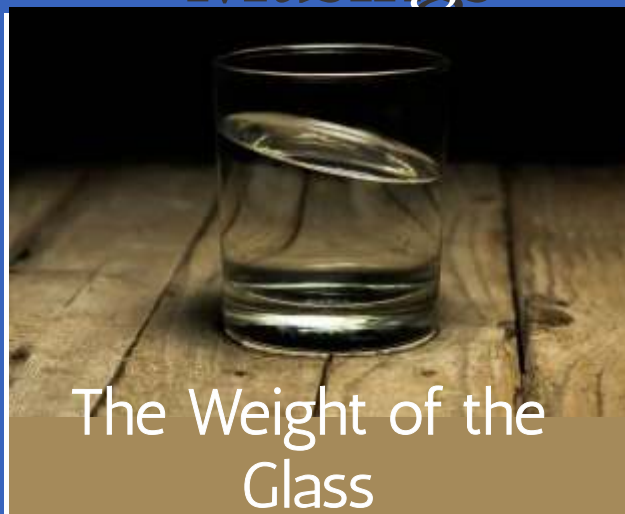
ENGLISH

FRENCH

### Common stationery vocabulary in French II

Holder	-titulaire
Inkpad	-tampon encreur
Inkpot	-encrier
Ink	-encreur
Invitation Card	-carte d'invitation
Ledger	-registre
Map	-carte
Magazine	-mensuel
Newspaper	-journal
Packing Paper	-papier d'emballage
Paper	-papier
Pencil	-crayon
Pen	-stylo
Pin Cushion	-coussin à épingles
Pocket Book	-portefeuille
Post Card	-carte postale
Postage Stamp	-timbre-poste
Punching Machine	-poinçonneuse
Punch	-coup de poing
Quill Pen	-plume d'oie
Receipt Book	-carnet de reçus
Register	-s'inscrire
Revenue Stamp	-timbre fiscal
Rubber Stamp	-tampon en caoutchouc
Ruler	-règle
Sealing Wax	-cire à cacheter
Seal	-sceller
Stool	-tabouret
Table	-tableau

## Sober Musings



Once upon a time, a psychology professor walked around on a stage while teaching stress management principles to an auditorium filled with students. As she raised a glass of water, everyone expected they'd be asked the typical "glass half empty or glass half full" question. Instead, with a smile on her face, the professor asked, "How heavy is this glass of water I'm holding?"

Students shouted out answers ranging from eight ounces to a couple of pounds.

She replied, "From my perspective, the absolute weight of this glass doesn't matter. It all depends on how long I hold it. If I hold it for a minute or two, it's fairly light. If I hold it for an hour straight, its weight might make my arm ache a little. If I hold it for a day straight, my arm will likely cramp up and feel completely numb and paralyzed, forcing me to drop the glass to the floor. In each case, the weight of the glass doesn't change, but the longer I hold it, the heavier it feels to me."

As the class shook their heads in agreement, she continued, "Your stresses and worries in life are very much like this glass of water. Think about them for a while and nothing happens. Think about them a bit longer and you begin to ache a little. Think about them all day long, and you will feel completely numb and paralyzed – incapable of doing anything else until you drop them."

**Moral of the Story:** On days when you're stressed out and feeling overwhelmed, learn to embrace the inevitable and let go. Some things cannot be controlled and no amount of worrying could put all your burdens away. Instead of letting stress get to you, embrace it and conquer it. Let yesterday's worries inspire you to a productive day.

Culled from the net





# TRANSMISSION COMPANY OF NIGERIA

## ENCROACHMENT ON TRANSMISSION LINES **RIGHT OF WAY (RoW)**



ONITSHA-NEW HAVEN 330kV SINGLE  
CIRCUIT LINE AND UGWUJAI-NEW HAVEN  
330kV DOUBLE CIRCUIT LINE



TCN'S TEAM AT  
NEW ARTISAN MARKET, ENUGU



TRADING ACTIVITIES UNDER AND AROUND TRANSMISSION LINES  
AT LUGBE FRUIT MARKET, FHA, ABUJA

**E**ncroaching on the transmission Right of Way (RoW) is one of the challenges TCN encounters in its operations. This is one of the major reasons impeding either the take-off or completion of transmission projects.

Recently, TCN Enugu Region went all out to sensitize residents and business people in Amechi Awkunanaw, Gariki, Enugu State who have converted transmission RoW to shops and houses, of the dangers of living and trading under RoW.

The rate at which structures are springing up under transmission lines in different parts of the country is quite alarming.

While some people benefit from these illegal structures by way of collecting rents on the shops and residential buildings, it should be noted that TCN is not liable for any electrical incident from RoW violation.



ILLEGAL STRUCTURE AT ARTISAN MARKET ENUGU  
STATE



MARKING OF ILLEGAL STRUCTURE AT ARTISAN MARKET  
ENUGU STATE

# Wedding Galore



Mr Tochukwu Ochi, (Auditor), Enugu Region and his wife



Mr Erpe Samuel (Industrial Relations), Port Harcourt Region and his wife



Mrs Binta Jibril, (HSE) CHQ and her husband



Mr. Caleb Samuel, (System Lines), Jos Sub-region and his wife



Mr. Ben John Isaiah, (HSE) ISO, and his wife



Mr. Korgbara Promise, ISO Port Harcourt Sub-region and his wife



## TCN CEO SINCE INCEPTION

W J J F I Y C A D A B I M N U W N I K A F P U  
H R H O U K I T A R A K A B U B A V I A R J M  
K O L D I P A K S A R M A V D V H R F J E K J  
M U S M A N G U R M O H A M M E D O X H F N L  
E A V G S F G M V P M R V E M Q K H P R R V K  
U B R S D O N P R I E S T M A N F N W I O Q N  
K A X K D A I L W H Q Z Q M B R H R Z O V W W  
A S E L K Z I Z A L U D B A D E M H A E L U S  
S U Y H Q A X G S W T H G S D H K R J C G T M  
O M F K A H S K H J C D O B A L N I E S S U H  
N A F P O P V T Z J U G V X V E F N O I N D E  
I S G K H R J O Q T T E H H Z F D Y Q F H M X  
W I P R T L D A K Y H H R H X F P Q H N U W P  
D M D J M K H Q C T R T T G O S E Z E P H K T  
O F H E Y A R I N N I K A A L O S U L O W U D  
G L V M S O X V C P A U L S T E F I N S I N K

Find the following words in the puzzle.

Words are hidden ↑ ↓ → ← and ↘ .

ABUBAKAR ATIKU  
AKINWUNMI BADA  
DIPAK SARMA  
DON PRIESTMAN  
GODWIN OSAKUE

HUSSEIN LABO  
ISA MUSA  
MARK KAST  
OLUSOLA AKINNIRAYE  
PAUL STEFINSIN

SULE AHMED ABDULAZIZ  
USMAN GUR MOHAMMED

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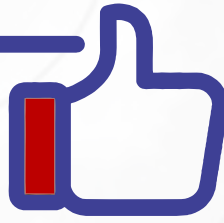
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## FEEDBACK PAGE



Etoniekwu Charles

The present TCN management and federal government are doing marvelously well by providing apparatus that will improve power supply in the country

2 w Like Reply Hide



Top fan

Olasumbo Oladosu

The way TCN has been upgrading transmission substation and expansion of power generation, lighten up Nigeria is a stone throw to SUCCESS 🙌

Truly

👍 TCN Cares



Top fan

Abdulazeez Ayuba Yerima

This is great news for us at Kano and the surrounding areas! The new transformer will help to improve the reliability and stability of the power supply in the region. Thank you to TCN for their hard work in making this project a success.

2 w Like Reply Hide



Delta Association of Chambers of Commerce Industry Mines and Agriculture

[Follow](#)

This is a great piece of information. We know a rice mill near Auchi that has been having challenges due to the TCN asset collapse that is now being replaced.



Jeremiah E. Okoawo

I appreciate the updates provided here by the TCN, I have being following up since I liked the page. It is awesome.

However, I would like the graphic quality of the report to be improved so we can check all parameters especially the numbers and analyse properly.

Well done TCN.

4 d Like Reply [Send message](#) Hide Edited



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**Do not just ignore a suspicious  
activity around TCN's installations.  
Call TCN on **07016839880**.**

**Be patriotic.**



TCN\_NIGERIA



14, Zambezi Crescent, Maitama, Abuja



TRANSMISSION COMPANY OF NIGERIA



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