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TCN Transmission News

IN-HOUSE JOURNAL OF TRANSMISSION COMPANY OF NIGERIA

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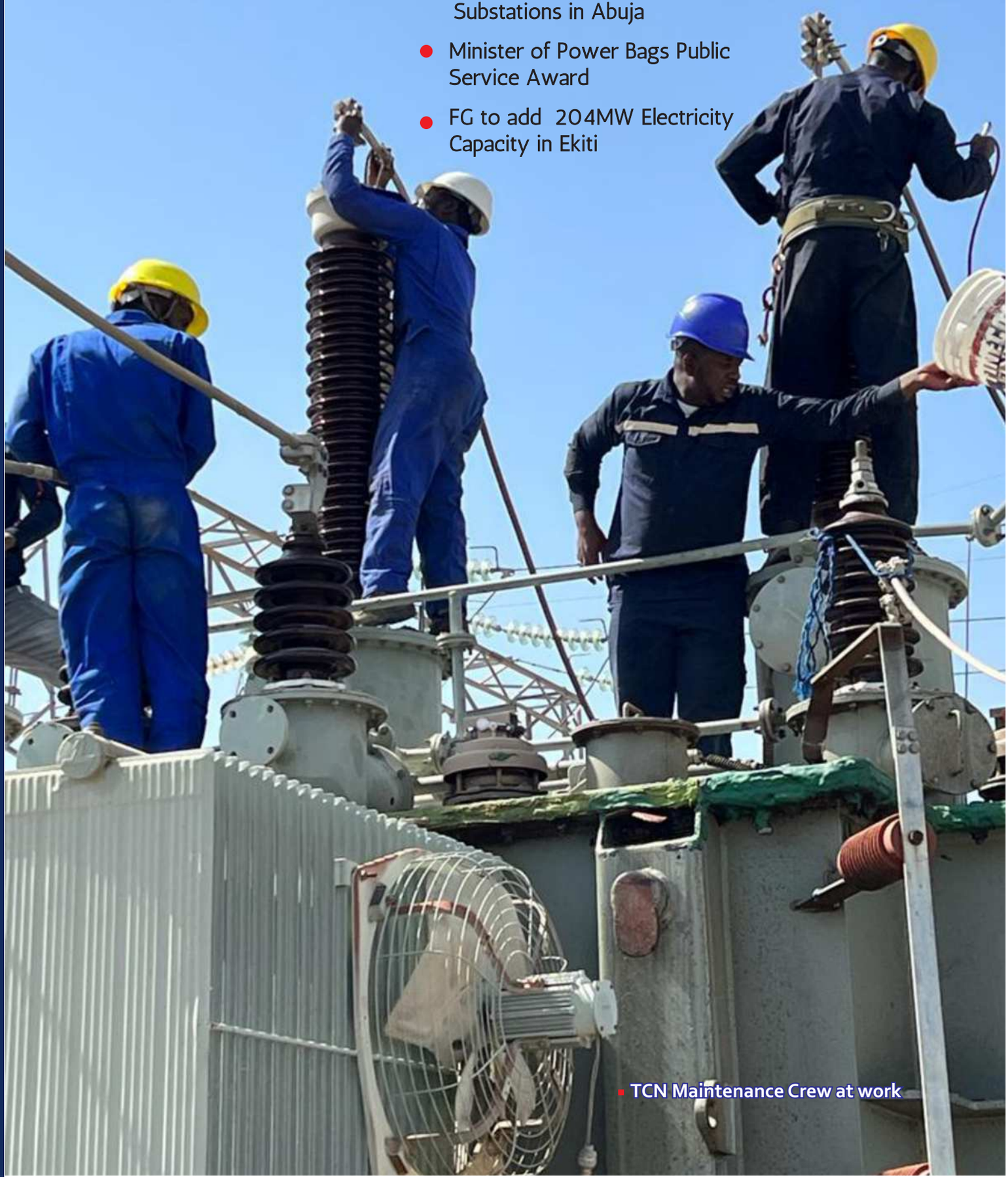
- FG to Commission Three Power Substations in Abuja
- Minister of Power Bags Public Service Award
- FG to add 204MW Electricity Capacity in Ekiti



TCN Maintenance Crew at work

TCN TRANSMISSION NEWS

SEPTEMBER 2022

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TCN Transmission News
IN-HOUSE JOURNAL OF TRANSMISSION COMPANY OF NIGERIA

CONTENTS

September 2022 / ISSUE 35

EDITOR'S NOTE

Again, the transmission crew is glad to have you all walk through this edition with us as we bring you updates on TCN activities for another quarter.

The level of massive project implementation by TCN in recent times is unprecedented and can be easily seen on the Regional Focus page of our Magazine. In this edition, we turn the focus on the Bauchi Region which covers the seven states of Adamawa, Bauchi, Borno, Gombe, Plateau, Taraba, and Yobe. Like other regions, Bauchi Region showcases several completed and ongoing projects including donor-funded projects. It is gratifying that the implementation of more than 80% of these projects are progressing simultaneously with the target for completion imminently in view.

In previous editions, we brought you highligts of the Abuja Feeding Scheme (also referred to as the Abuja Ring Project) which is a major intervention project that targets the injection of 820MW of electricity to boost power supply for Abuja. It is a thing of pride for TCN that the execution of this laudable project is on track and three out of the five substation projects are at various levels of completion. On completion, these plethora of projects would ensure bulk electricity sufficiency in Abuja and Environs for the next 50 years!

In the South-Western Region, the MD/CEO, Engr. Dr. Sule Abdulaziz performed the groundbreaking ceremony of a 2x60MVA substation and a switching station in Ekiti State, with the aim of shoring up voltage and quantum of bulk electricity supply in the state and environs.

In addition to the several completed projects as well as ongoing ones, TCN also recently signed a 25M Euro grant agreement with the European Union (EU) and the Agence Francaise de Developpment (AFD), to strengthen the nation's grid in the North-Western axis of Nigeria. Consequently, a contract was signed for the reconstruction and construction of 330kV quad conductor transmission lines between Kaduna and Kano States among others.

These arrays of achievements recorded by TCN during this period have not come without challenges. Among these challenges is the major hindrance faced at the early stages of project implementation. Disputes arose from complaints over inadequacy of compensation for wayleave. In the bid to find a lasting solution to this challenge and fast-track project execution, TCN, with the support of the World Bank, formally adopted a Grievance Redress Mechanism (GRM), to facilitate speedy resolution of compensation disputes and other way leave issues. This commendable step has already started to positively impact the process of dispute resolution between TCN and the host communities.

The vital component of every organization is its human resource capital. Accordingly, TCN Management has made human capital development a deliberate policy and the result is that, several training programs and workshops were conducted for staff at all levels in order to bring them up to date with emerging technologies and global trends in the industry and market. Some of these initiatives includes a workshop on the implementation of SCADA/EMS and Telecoms Project, auto card training for engineers.

For the records, TCN has continued to receive firm support from the Federal Government, the Ministry, as well as its donor partners, leading to the significant milestone achievements during the period. These series of record-breaking performance of TCN under the leadership of Engr. Abubakar Aliyu, FNSE was no doubt a factor among several others, that earned the Hon. Minister of Power, the 2022 "Leadership Public Officer of the Year Award."

As year 2022 gradually winds down, we wish to congratulate the Hon Minister of Power and Management of TCN for the stellar performance even as we look forward for more accolades in the coming year.

Happy reading.

Ndidi Mbah
Editor-in-Chief

Minister of Power, Engr. Abubakar D. Aliyu, FNSE

Minister of Power Bags Public Service Award

By Uloma Osuagwu

The Minister of Power, Engr. Abubakar D. Aliyu, FNSE, was conferred with the Award of Public Officer of the Year, at Blue Print Newspaper's Annual Public Lectures and Impact Series/Awards held on Tuesday, August 16, 2022.

The Minister who was one of the awardees at the event, was recognized for his exceptional commitment to serving the public through the introduction of innovative reforms that have enhanced public trust in the Nigerian Power Sector since he assumed office.

Evidently, with a track record of performance of over 10 years' experience as Deputy Governor of Yobe State and two decades as a civil servant, Engr. Aliyu came to the job well prepared to confront the daunting challenges bedeviling the Nigerian power sector. Determined to leave the sector on the path of rapid improvement and growth, he set to work with his team on the needed changes.

To ensure synergy in the sector, the Minister initiated regular consultation among all the players in the entire electricity value chain. This initiative has brought about increased public and private sector collaboration from the Generation, Transmission, to Distribution players. It has also ushered in a new mindset of mutual interest and cooperation among the critical stakeholders in the sector.

Engr. Aliyu is also pushing ongoing projects implementation efforts to boost power supply in the country through his focused implementation of the Presidential Power Initiative (PPI) which is targeted at the incremental improvement in power supply to Nigerians across the value chain of generation, transmission and distribution.

While expressing his appreciation to the organisers of the Annual Award, the Minister remarked that the Year 2022 event demonstrated the consistency of Blueprint Newspapers in

recognizing and appreciating personalities and institutions for outstanding performance over the course of their service in the public or private sectors. He expressed gratitude to his team members, agencies and parastatals in the power sector for their steadfast support, dogged spirit and collective contributions to the actualization of the Federal Government's Presidential Power Initiative (PPI) projects.

He expressed satisfaction at the progress being made on the projects thus far and was optimistic of the realization of additional 25,000MW to the national grid by the time the programme is fully implemented in 2025.

Engr. Aliyu also used the occasion to provide insight into the current stage of implementation of the PPI. He revealed that the first batch of the power transformers procured under the project would arrive the country by September 2022, while the complete delivery of others for the first phase and delivery of the mobile substations in batches would be completed in January 2023, and the final batch delivered in May 2023.

While listing several measures and policies that have been put in place to maintain harmonious cooperation and synergy among all players in the electricity value chain, Engr. Aliyu said, "We now have increased public and private collaboration from generation, transmission, to distribution. We are cultivating in all stakeholders, a sense of common ownership of the system, strengthening inter-dependence of the agencies, creating seamless interface of systems, reducing incidences of power play, checking inter-agency rivalry and generally re-inforcing the hitherto fragile connection between departments and agencies within the sector."

These interventions, according to him, have reduced bickering with very impactful and significant improvement in the results recorded. "The work of the Ministerial Power Sector Working Group (MPSWG) among several other initiatives and interventions has enabled several critical stakeholders to deal with and speedily resolve issues without bureaucratic bottlenecks experienced in the past," he said.

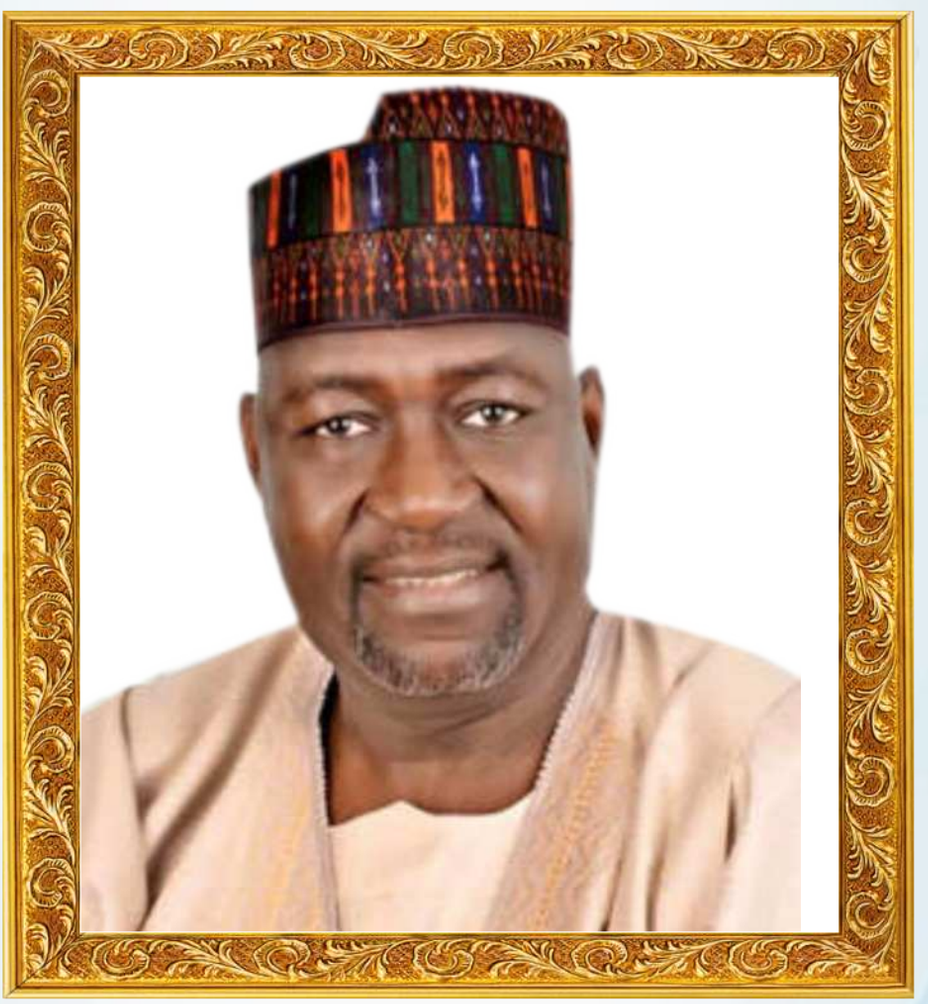
The Award which was to encourage the awardees to do more towards building a better Nigeria, was attended by a host of dignitaries and respected traditional leaders across the country.

Presentation of Award to Minister of Power, Engr Abubakar D. Aliyu, FNSE, by the Executive Governor of Yobe State, Mai Mala Buni, CON

The Board, Management and staff of the

Transmission Company of Nigeria (TCN)

Congratulate



ENGR. ABUBAKAR D. ALIYU (FNSE)

HON. MINISTER OF POWER

On your well-deserved conferment of the

"2022 Blueprint Public Officer of the Year Award".

TCN BOARD MEMBERS

In this edition, TCN Transmission News beams the spotlight on members of the Governing Board of Transmission Company of Nigeria (TCN), recently inaugurated by the Honurable Minister of Power, Engr. Abubakar D. Aliyu, FNSE

Bukar Buni

Engr Bukar Bulama Buni, is the Chairman of the Board.He holds a B.Sc. degree in Electricals / Electronics Engineering.

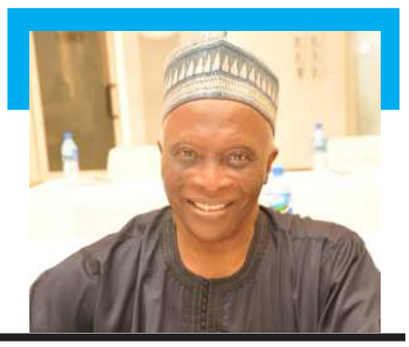
Engr. Bukar retired in 2015 as a Permanent Secretary in Yobe State after 35 years of meritorious service before his appointment in June 2022 into the Board of TCN.

He served as Permanent Secretary, Ministry of Works (2011-2015), Ministry of Housing (2009-2011), Yobe Broadcasting Corporation, (YBC), Sole Administrator, Yobe Television, Chairman, Caretaker Committee, Gujba Local Government, Yobe State Ministry of Transport & Energy.

He also held several Management positions in Borno and Yobe State Government including, Director, Engineering Services, Yobe Broadcasting Corporation and Chief Engineer, Borno Radio Television Corporation (BRTV). His public service career began in Borno State Television Corporation (BRTV) as Project Engineer.

Engr. Bukar is a Member, Council for the Regulation of Engineering in Nigeria (COREN), Member, Institute of Electrical & Electronics Incorporated Engineer (IEEIE), and Fellow Member, Nigeria Society of Engineers (FNSE).

Clement Baiye



Mr Clement Baiye holds a Masters degree in International Political Economy from University of Warwick, United Kingdom and BSc, Political Science from Ahmadu Bello University, Zaria.

Prior to his appointment into TCN Board, he served a 5-year term as a Commissioner at the Nigerian Communications Commission (NCC) and is currently the Chairman, Regency Alliance Insurance Plc, Arise Microfinance Limited and Habitat Trust Limited (a property company).

He is a John Maxwell Certified Leadership Coach and mentor, and has attended three Executive Programmes at Harvard Kennedy School, culminating in an award of Executive Certificate in Public Leadership. He is also an associate member of Corporate Governance Institute.

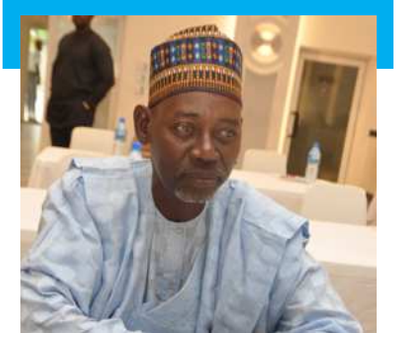
Appolonia Okigbo

Mrs Appolonia Okigbo holds a B.Sc. in Public Administration from Nasarawa State University and a Higher National Diploma in Quantity Survey from Kaduna Polytechnic.

Before her appointment into the Board, she served as the Senior Special Assistant to the President on Budget Monitoring and Price Intelligence (SSAP, BMPIU) which entailed the review and certification of capital projects. She distinguished herself in this position as she brought to bear ground breaking ideas and expertise that contributed immensely to the design of a robust policy frame work and strategy for national economic growth.

Her remarkable performance led to her redeployment as Special Assistant to the President on Monitoring and Evaluation of Projects and Programmes as directed by Mr. President. She is a member of Nigeria Gas Association, NNPC/PETROBRASS, amongst others.

Muhammed Wasaram



Engr. Muhammed Abubakar Wasaram holds a B.Sc. degree in Electrical and Electronics.

Before his Board appointment, he worked at the Rural Electrification Agency (REA), as the Director of Promotions (Information and Outreach), and later as Director, Projects where he acted briefly as Managing Director/CEO of the Agency following the expiration of the tenure of the incumbent.

Based on his stellar performance, he was subsequently appointed into the newly constituted Board of the Agency as ED (Technical Services), a position he held until his retirement in January 2021.

His legacies at REA include the design of effective rural engagement strategies for the implementation of the national rural electrification agenda of the Federal Government under his direction as Director Promotions (Information and Outreach), and as Acting MD/CEO, he established policies that improved staff motivation and productivity.

He also worked with Borno State Government at the Rural Electrification Board (REB) and rose to the position of General Manager from 1997 to 2003.

Aisha Omar

Mrs. Aisha Omar represents Ministry of Finance, Budget and National Planning on the Goverining Board of TCN.

She holds a B.Sc. degree in Business Administration with specialization in Financial Management and Banking from Ahmadu Bello University, Zaria, in 1989 and has attended several training and certification courses including; Effective Policy Analysis and Implementation at the Hammersmith Training Consult, London, among others.

She is presently a Director in the Federal Ministry of Finance, International Economic Relations Department.

Prior to this, she had served as the Deputy Director, State House, the Presidency, General Duties Division, Administration Department, Deputy Director of Finance and Account, Ministry of Interior, among others.

She also presently serves on the Boards of Directors of local and international Institutions which include: African Export-Import Bank, Cairo, Egypt; OPEC Fund for International Development (OFID); Vienna, Austria; ECOWAS Bank for Investment and Development (EBID), Lome, Togo; Family Homes Funds Limited, Abuja Nigeria; and National Great Green Wall, Abuja.

Ali Haruna

Mr. Ali Haruna holds a Master's and Bachelor of Science Degree in Business Administration.

He had over two decades of public service experience focused on administration, financial management, human resource development and coordination for public and private sector projects.

Prior to his Board appointment, he worked in various places including the Sokoto State Government in coordination and implementation of the state economic programmes, contributed to the Nigerian Army strategic initiatives and was also at the United Bank for Africa Plc as Deputy General Manager, before retiring from service in August 2012.

Mr Ali is committed to national development programmes and initiatives, including youth empowerment, energy solutions, agriculture and other causes.

Osagie Ediale

Mr Osagie Ediale holds a Bachelor of Science (BSc.) in Economics from Lagos State University, Post Graduate Diploma in Oil Supply and Trading from Petroleum & Energy Studies, Oxford, UK and an MBA in Oil & Gas Management from University of Dundee, Scotland.

Osagie has over 27 years of business/corporate experience spanning Finance, Telecommunications and Energy Sectors. He started his career with Fidelity Finance Ltd, trading shares on the floor of the Nigerian Stock Exchange (NSE).

Prior to his appointment as a member of the TCN Governing Board, he was the Chief Executive Officer (CEO), Flagship Energy Ltd, an oil and gas trading company. He was a key member of the team at the Nigerian Communications Commission (NCC), that successfully launched the mobile telephone services in Nigeria. Subsequently, he also served as Regulatory/Business Consultant to major players in the telecom industry.

He is an Associate Member of the Chartered Institute of Stockbrokers.

Alex Okoh

Mr. Alexander Ayoola Okoh represents Bureau of Public Enterprises (BPE) on the Governing Board of TCN.

He holds an MSc in Banking & Finance and BSc in Sociology.

Prior to his appointment as the DG BPE, he served as the Managing Partner of Ashford & McGuire Consulting Ltd, a leading, wholly indigenous Management Consulting firm. He also had local and international banking career. He worked with International Bank Limited (Citibank), United Bank for Africa Plc, Citibank New York, Fidelity Bank London, Swiss Banking Corporation, Zurich and Grindlays Bank, Zimbabwe respectively.

As BPE helmsman, his transformational leadership stint includes management turn around and repositioning of organisation and agencies for optimum productivity post-privatisation.

He is also an Alumnus of the Harvard Business School's Advanced Management Programme.

Nsima Ekere

Nsima U. Ekere is a graduate of Estate Management from the prestigious University of Nigeria, Nsukka.

Prior to his appointment into TCN Board, he was the Executive Chairman, Akwa Ibom Investment and Industrial Promotion Council (AKIIPOC); Chairman of Ibom Power Company; Deputy Governor of Akwa Ibom State; Managing Director/CEO of Niger Delta Development Commission (NDDC). He also served on the Board of several public and private companies.

Mr. Nsima Ukere is an accomplished professional and technocrat with over 35 years national and international experience in public administration, construction, real estate, urban & regional planning, power generation & transmission Oil & Gas.

He is a recipient of numerous honors and merit awards including religious, academic, traditional titles and socio-cultural honours in recognition of his endearing contributions and commendable service to his diverse communities.

Gazali Tukur

Engr. Gazali Tukur holds a Masters Degree in Facilities Management from Heriot-Watt University, B.Sc. in Electrical Engineering and Executive Diploma in Management.

He is the Managing Director, Gams and Consortium, Abell Facility Manager for Gurara Multipurpose Dam, Managing Consultant, Gams and Abell Limited, and Managing Director, Gams and Abell Oil & Gas Limited.

He has over thirty (30) years cumulative experience in the private sector, developing structural projects with major corporations such as Shell petroleum, Nigerian National Petroleum Company Limited and Central Bank of Nigeria. He has also written several publications including Maintenance of Electrical/Electronic Production Machineries, Peugeot Automobile Nigeria Limited, Kaduna.

He is a Member, Council for Regulation of Engineering in Nigeria (COREN), Member, Nigerian Society of Engineers (MNSE), and Member, Association of Consulting Engineers in Nigeria (ACEN).

Abdulaziz Sule

Engr. (Dr). Sule Ahmed Abdulaziz is the current Managing Director/Chief Executive Officer of TCN and represents the Executive Management of the Company on the Governing Board.

He holds a Masters in Automation Engineering from The Technical University, Sofia, Bulgaria and B.Sc. in Electrical Engineering.

Prior to his confirmation on 4th April, 2022, he was the Acting Managing Director of TCN from the 19th of May, 2020, overseeing the overall supervision of the transmission network operations and maintenance, system operations and market administration.

Engr. (Dr). Sule Ahmed Abdulaziz held several management positions in the company, including General Manager, Projects, at the corporate headquarters, Regional Transmission Manager, Shiroro and Abuja Regions before his appointment as CEO of TCN. He joined the defunct National Electric Power Authority (NEPA) in 1996 as Manager, Electrical, and rose through the ranks to become the Senior Manager, and subsequently the Principal Manager, Projects in the defunct Power Holding Company (PHCN), supervising various project sites nationwide.

He has attended several local and international Engineering, Technical and Administrative courses. He is a fellow of the Nigerian Society of Engineers (FNSE), Council for the Regulations of Engineering (COREN), and a Chartered Member of Nigeria Institute of Management (NIM).

Nnosike Emmanuel

Engr. Emmanuel N. Nosike is the Director, Transmission Service Department, Federal Ministry of Power and represents the Ministry of Power on the Governing Board of TCN.

Before becoming Director Transmission, Engr. Nosike had worked in the Ministry of Niger Delta Affairs as the Assistant Director, Head of Division, Engineering Services. He also currently serves on the Board committee, technical and regulatory FGN Power/Siemens.

An electrical engineer with over 32 years experience, he started his engineering practice with the Federal Ministry of Defence as a pupillage engineer. He also represented Nigeria at a joint Technical Session in Cote D' Ivoire for ECOWAS Heads of Government meeting in 2018 and was the Chairman, Technical Session.

He is a Member and Fellow, Nigerian Society of Engineers (MNSE, FNSE), Nigerian Institute of Power Engineers (FNIPE), and a COREN registered Engineer.

Imamudden Talba

Mr. Imamudden Talba is a Lawyer with diverse experience and exposure in administration and utility regulation. He holds an LLB (Hons), and B.L Degree and was called to Bar in 1982.

Imamuddeen Talba has been awarded a PhD (LL. D) in Applied Regulatory Framework by the Commonwealth University in the Belize.

Prior to his appointment into TCN Board he served as the Chairman of Steering Committee of the Renewable Energy and Energy Efficiency Associations-Alliance and also the Principal Partner at Talba Chambers (a firm of Legal and Regulatory Consultants).

His work experience in regulation and policy formulation includes over 13 years in Insurance Regulation at NAICOM, 12 years in Electricity Regulation at NERC and also advisory services to the Minister of Power between 2012 to 2014. With an excellent understanding of Regulatory Policy and Reforms in the electricity industry, he also served as the pioneer Secretary and Legal Advisor to the National Insurance Supervisory Board (then NAICOM in 1997), amongst other positions.

He is a member of the Committee of Chairmen of European Energy Regional Regulators Association (ERRA); Member Executive Committee of the African Forum for Utility Regulators (AFUR), a Fellow, African Business School, Fellow of Certified International Management Consultants, and Fellow Institute of Leadership and Management among several others.

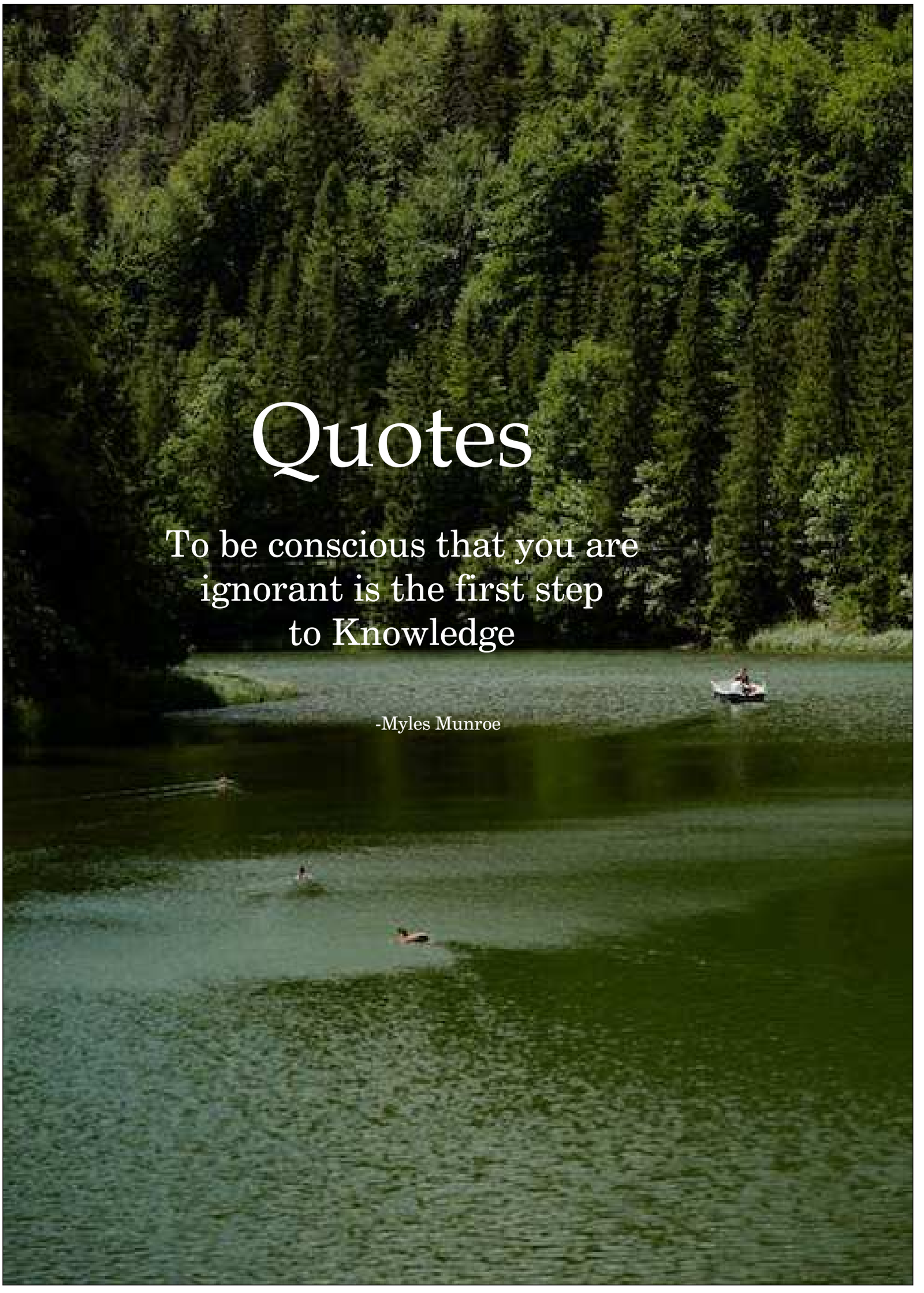
Abdulkarim Disu

Abdul Karim Babatunde Disu is a member, Governing Board of TCN, and Chairman Finance Committee, Board of Directors, Transmission Company of Nigeria.

He holds an Executive MBA from the International Graduate School of Management, University of Navarra, Barcelona, Spain and B.Sc., Accounting from University of Lagos. His over 30 years' experience cuts across Strategic and Operational Management, Business Process Re-engineering, Infrastructural Development and Project Management in both the Private and Public sectors.

Prior to his appointment to the TCN Board, he worked with Bristow Helicopters (Nig) Ltd, served as a consultant to Lekki Worldwide Investments Ltd, and also established Springfresh Nigeria Limited, a consulting company, appointed as the Technical Consultant to The Infrastructure Bank on the N25 billion Federal Government of Nigeria Public Mass Transit Revolving Fund Scheme and provided extensive advisory on the operations and financials of beneficiaries under the scheme.

He is also a member of the Chartered Institute of Logistics and Transport, a Fellow of The Certified Institute of Auctioneers, Nigeria and a member of Nigeria Olympic Committee, Marketing & Sponsorship Commission.


Quotes
To be conscious that you are ignorant is the first step to Knowledge
-Myles Munroe

Three Power Substations to come on Stream in Abuja

By Ndidi Mbah

MD/CEO TCN, Engr. Dr. Sule Abdulaziz, addressing pressmen at the 330kV New Apo-Pigba Substation

The Federal Government is set to commission three power transmission substations out of the five substations comprising the Abuja Feeding Scheme to add 820 megawatts (MW) to the national grid by December 2022.

The Managing Director/CEO of Transmission Company of Nigeria (TCN), Engr. Dr. Sule Abdulaziz made this known on Wednesday, 5th October 2022, during an inspection tour of the projects.

The Abuja feeding Scheme which is being funded by the French Development Agency (AFD) to the tune of $170 million (N70.4 billion currently) comprises five substations, 143km of 330kV line from Lafia in Nasarawa State to Abuja and 81km of 132kV transmission lines within Abuja. It was commenced in April 2019 and is expected to be commissioned in December 2022.

According to the MD/CEO, "If we talk about the transformers, we're going to have 820MW; for the transmission line, we are going to have 1,465MW which shows that the capacity of transmission line is higher and it means in the future, we can build more substations, without having to upgrade our lines."

At the 132/33kV Gwarinpa GIS project which has two units of 60MVA transformers, Engr. Abdulaziz disclosed that the substation was at 93 percent completion level and would contribute to ensuring adequate supply of power in Abuja. He was confident that upon completion of the Project, Abuja will no longer experience problems with electricity supply for the next 50 years.

Speaking at the 132kV Wumba-Lokogoma Substation which equally has two units of 60MVA transformers and at 92% completion level, Engr. Abdulaziz directed the contractor to fast-track its completion by December 2022 as stipulated in the contract agreement.

He said, "This Administration started this project in 2019 and we are determined to ensure its completion and commissioning during its lifetime. So, this station will come on stream by December 2022."

At the flagship 330kV New Apo-Pigba Substation, construction was ongoing at 62% work level.

The 132kV Kuje Substation has three units of 60MVA power transformers which were at 92% completion level, while the 132kV Lugbe West Substation with two units of 150MVA was at 61% completion level.

132kV Kuje Substation

Materials at the site of the 132kV Lugbe West Substation

132/33kV Gwarinpa GIS

330kV New Apo-Pigba Substation

At the 132kV Wumba-Lokogoma Substation

Electricity Capacity in Ekiti to be Boosted by 204MW

TCN Begins transmission line, substations project

By Ndidi Mbah

MD/CEO TCN, Engr. Dr. Sule Abdulaziz

The Federal Government through the Transmission Company of Nigeria (TCN), has begun the construction of a 132kV transmission line, a 2 X 60MVA transmission substation, and a switching station in Ekiti in the bid to ultimately boost electricity transmission capacity in the State by204 megawatts (MW).

Speaking during the ground breaking ceremony in Ado Ekiti on Wednesday, 10th August, 2022, the Minister of Power, Engr. Abubakar D. Aliyu, said the project consisted of a 50 kilometre stretch of 132kV transmission line from Ikere (Ado-Ekiti) with a turn in-turn out at Ijesa-Isu that terminates at Ilupeju-Ekiti.

It also has a 2X60MVA, 132/33kV transmission substation with four line bays at Ijesa-Isu Ekiti with a switching station at Ikere (Ado-Ekiti) in the State.

The Minister who was represented by the Managing Director and CEO of Transmission Company of Nigeria, (TCN), Engr. Dr. Sule Ahmed Abdulaziz, said; "For TCN, this is a very strategic project and we believe it will have a massive impact on bulk power transmission in Ekiti and its environs. The projects are part of the many projects being undertaken by Transmission Company of Nigeria in pursuit of its grid expansion programme in line with Mr. President's mandate for the expansion of the Power Sector for sustainable development."

The Minister also disclosed that TCN was executing substations and lines projects which were at varying stages of completion in several transmission regions nationwide.

"These projects are clear indications that the Federal Government is not relenting in its commitment to ensure that the nation's power sector receives the desired boost. For the residents of Ekiti State and its environs, the additional 204MW capacity to the grid means that more bulk supply will be readily available for off-take by Benin DisCo for its customers in Ekiti and environs," he noted.

"The substations' project will also take care of suppressed load in this axis and relieve the Ado-Ekiti Substation while ensuring a more reliable bulk electricity supply to Benin DisCo for onward distribution to the people of Ekiti State," he added.

The Minister also called on Ekiti residents to support Government's efforts against vandalisation of power facilities. He said, "We must demonstrate our collective responsibility towards preserving the nation's power equipment in and around our communities so that the Government can concentrate on its grid expansion initiative instead of wasting funds in replacing vandalized power infrastructure."

In his remarks, the Governor of Ekiti State, His Excellency, Dr. Kayode Fayemi, CON, represented by the Deputy Governor, Otunba Bisi Egbeyemi, commended efforts of the Federal Government to improve infrastructure in the State. He however, lamented that Ekiti State currently received only a pitiable 26MW of electricity from the national grid, which would be addressed by the execution of the two substation projects.

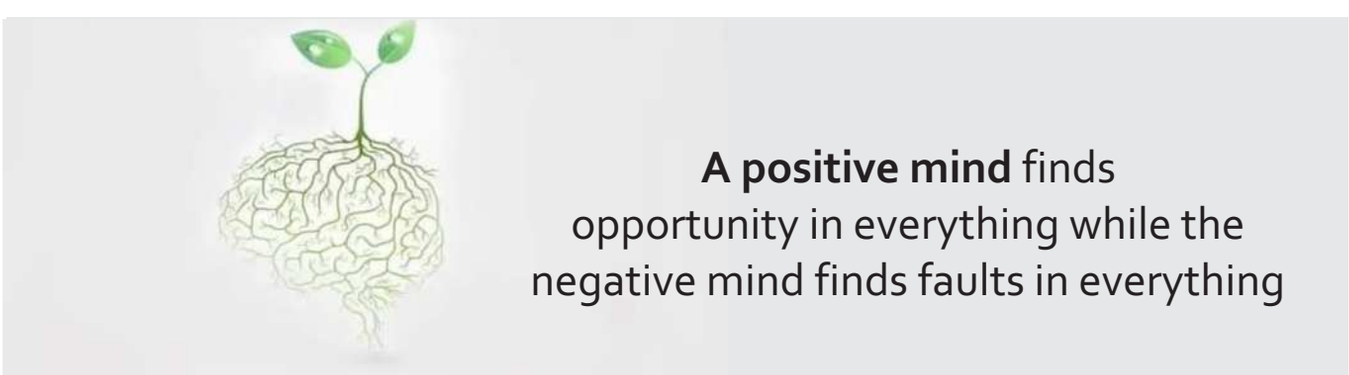
In his words, "This level of electricity supply is worrisome and grossly inadequate going by the energy need of our population, estimated to be around 150 megawatts in 2014. Beyond this, the quality of the electricity supply is grossly below standard due to non-availability of adequate 132/33kV transmission line and the associated equipment that can help improve the quality of power to be delivered to our people, especially those in the interior and rural areas."

He also noted that, though the new projects were being undertaken by the Federal Government, the State was also executing projects that will contribute to the improvement of electricity supply in Ekiti State. "For us as a State, the project, when completed will complement the plans of the Ekiti State Government at improving the quality of power supply to the 16 Local Government Areas of the State," he emphasized.

Participants

MD/CEO TCN, Engr. Dr. Sule Abdulaziz, performing the groundbreaking ceremony

Unveiling of the plaque



MR. TEMITOPE PETER FASHEDEMI

PERMANENT SECRETARY,
FEDERAL MINISTRY OF POWER

Mr. Temitope Fashedemi is the Permanent Secretary, Federal Ministry of Power. He was posted to the Ministry following the deployment of Permanent Secretaries to various Ministries, Departments, and Agencies (MDAs) by the Office of the Head of Civil Service of the Federation (HOCSF), on 31st August, 2022.

Mr. Fashedemi holds a B.Sc. degree in Computer Science and Economics (Combined Honours) from Obafemi Awolowo University, Ile-Ife, a Diploma in Management at the Nigerian Institute of Management (NIM) and an Executive MBA from the Lagos Business School (2004-2005).

Prior to his appointment, he was the Permanent Secretary, Special Duties; Office of the Head of Civil Service of the Federation in December 2019, and previously served as a member of the Board of Galaxy Backbone Ltd., and Governing Board of the National Information Technology Development Agency (NITDA). He also served as Nigeria's representative on the Governmental Advisory Council (GAC) of the Internet Corporation for Assigned Names and Numbers (ICANN) since 2014.

Mr. Temitope Fashedemi's career strides cut across the private and public sectors. His remarkable ICT career earned him top management and board positions on top-notch bodies such as Internet Service Providers Association of Nigeria (ISPAN), Nigeria Internet Group (NIG), and Nigeria Internet Registration Association (NiRA) over a period of 16 years.

He obtained professional certifications in Information and Communications Technology (ICT), Telecommunications, Project Management among others. He also attended several international courses.

He is a Chartered and Fellow member of the Nigerian Institute of Management (Chartered), and a certified Computer Scientist/Economist cum Management expert.

TCN Transmission News welcomes Mr Temitope Fashedemi to the Federal Ministry of Power and wishes him a successful tenure as Permanent Secretary.

Nigeria, EU and AFD Sign €25m Grant to Strengthen Electricity Grid in North-West Nigeria

By Eric Ephraim Ene

R-L; Minister of State for Budget and National Planning, Prince Clem Agba, and AFD Country Director in Nigeria, Mr. Xavier Muron

The Nigerian Government and the Agence Française de Développement (AFD), have signed a grant agreement of €25 million for the Northern Corridor Project jointly funded by the European Union (EU) and AFD.

The Minister of State for Budget and National Planning, Prince Clem Agba, and the AFD Country Director in Nigeria, Mr. Xavier Muron, signed the agreement in the presence of the Ambassador of France to Nigeria, Her Excellency, Emmanuelle Blatmann, and the Head of Cooperation at the European Union Delegation to Nigeria and ECOWAS, Ms. Cecile TASSIN-PELZER on Wednesday, 14th September 2022, in Abuja.

Speaking at the event, Prince Clem Agba, thanked the EU and AFD for intervening in the Nigerian electricity transmission project and noted that the grant will go a long way in aiding Nigeria's power improvement plan, especially in the Northern part of the country.

According to a statement from the AFD, "This project will help the Transmission Company of Nigeria (TCN) to operationalize its transmission expansion plan, through the construction of additional transmission lines and substations across eight states in the northern part of the country – Niger, Kebbi, Sokoto, Kaduna, Kano, Jigawa, Bauchi and Nasarawa."

The Honorable Minister of State assured the development partners that the Federal Government would execute the project efficiently for the economic growth of the country.

The Managing Director and Chief Executive Officer of Transmission Company of Nigeria (TCN), Engr. Dr. Sule

Abdulaziz in his remarks, expressed appreciation to the Federal Government of Nigeria, the European Union, and AFD for supporting the Northern Corridor Project which he noted was critical to TCN. He reiterated TCN's commitment to ensuring timely implementation of the project.

Mr. Xavier Muron, AFD Country Director in Nigeria, highlighted the importance of such project as a technical enabler for the integration of expected solar farms in the North-Western part of the country to the grid. He noted that transmission network has been a significant bottleneck in many countries in achieving diversified energy mix.

Cross section of participants

Speaking on behalf of the European Union, the Head of Cooperation, Ms. Cecile TASSIN-PELZER said; "We appreciate Team Europe's collaboration with the Government of Nigeria, which is a concrete example of how the EU Global Gateway can contribute to major investments in infrastructure development."

The Northern Corridor Project, being implemented by the Transmission Company of Nigeria (TCN), is meant to strengthen low-carbon economic growth in West Africa by improving the quality of the electricity network in Nigeria and supporting the development of a regional electricity market under the West African Power Pool (WAPP).

The Project entails the building of more than 800km of 330kV double circuit transmission lines and the construction or upgrade of 13 substations along the line route.

The grant agreement signed at the ceremony represents EU's contribution to the Project to complement the AFD contribution of €202 million which was signed in December 2020. The total cost of the project is estimated at €238 million including TCN's €12 million contribution.

In terms of expected impact, 5GW additional evacuation capacity is to be created under the project with potential transmission of 17TWh additional electricity every year. In addition to the improved evacuation capacity, there will be increased access to adequate and stable power as well as better quality of electricity supply in the short and long term.

The project is also expected to create job opportunities as approximately 600 jobs (500 during the construction phase and 100 in the operation phase) will be created.

Group photograph

WAPP to Create Liquidity Enhancement Fund As Chairman Lauds Financial Transparency

By Ndidi Mbah

Middle; WAPP Chairman, Engr. Dr. Sule Abdulaziz

The West African Power Pool (WAPP), will create a Liquidity Enhancement Revolving Fund (LERF), for the ECOWAS Regional Electricity Market.

Chairman, Executive Board of WAPP, Engr. Dr. Sule Ahmed Abdulaziz, gave this indication during the 54th meeting of the Executive Board held in Cotonou, Benin Republic on 6th August, 2022.

Engr. Abdulaziz said, "The review and adoption of the documents proposed by the Task Force on the creation of the Liquidity Enhancement Revolving Fund (LERF) will provide the ECOWAS Regional Electricity Market with a very important tool for cross border electricity trade by reducing the level of outstanding invoices, thereby providing participants in the market with a high degree of robustness and sustainability."

Speaking further at the meeting which was the second in 2022, he urged the participants to carefully examine the documents and make relevant comments on the drafts proposed by the WAPP Finance Committee.

The WAPP Chief also lauded the well-documented 2021 Financial Statements of the organization, saying, "When I look at the Financial Statements, I am convinced that the WAPP is working hard and is quite transparent as shown by the independent audit. This attests that the Financial Statements are regular, sincere, and in accordance with international standards."

In his remarks, the Secretary General of WAPP Executive Board, Siengui Ki Apollinaire, equally reiterated the fact that the latest Financial Statements were transparent.

He said, "The 2021 budget was executed transparently and rigorously, and it is with pleasure that I announce that the 2021 consolidated Financial Statements of our organization have been declared regular, sincere, and compliant with international standards by a well-known independent auditor."

Mr. Ki expressed gratitude to Mr. Patrice Talon, President of the Republic of Benin, for the hospitality extended to the organization and for hosting the meeting.

Participants at the meeting observed a minute silence for late Dr. Joseph Makoju, who was a WAPP honorary member from Nigeria who passed in April 2022, amidst glowing tributes for his contributions to the development of WAPP.

Contract for the Reconstruction and Construction of 330kV Quad Conductor Transmission Lines Signed

By Grace Sambe-Jauro

MD CEO, TCN, Engr. Dr. Sule A. Abdulaziz, and Deputy General Manager of Xian Electric Engineering Company Ltd, Mr. Zhou Xiaoan

The Managing Director/Chief Executive Officer of Transmission Company of Nigeria (TCN), Engr. Dr. Sule A. Abdulaziz has charged the contractors handling the 330kV double circuit quad conductor transmission lines between Kaduna and Kano States to complete the project within the stipulated time frame.

The MD/CEO gave this charge during the signing of contract between TCN and JV of Xian Electric Engineering Company Equipment & Engineering Co. Ltd, for the Reconstruction and Construction of 330kV Double Circuit Quad Conductor Transmission Lines on Monday, 22nd August, 2022.

Speaking during the signing ceremony at the TCN Corporate headquarters, Abuja, Engr. Abdulaziz remarked that the project was behind schedule as it was supposed to have been completed about seven years ago, having been procured around 2015 and 2016, but had to be cancelled due to some unresolved issues, which have now been streamlined.

He added that the project, which was under the Nigeria Transmission Expansion Project Phase 1 (NTEP-1), and financed by the African Development Bank (AFDB) at the sum of 6.5million dollars plus 10.5-million-naira local content, was important especially to the northern region of the country as it was conceived to boost power supply to the area.

Speaking at the event, the AGM JICA-PIU, Engr. Mathew A. Ajibade described the project as a major milestone for TCN, stating that the line project was very critical and on completion, would link all the states in the Northern part of the country, and enhance the wheeling capacity of power from Shiroro to that axis, further strengthening the grid.

The Deputy General Manager of Xian Electric Engineering Company Ltd, Mr. Zhou Xiaoan who spoke on behalf of the contractors, reiterated their commitment to complete the project in accordance with set timelines. "We know how important this project is to TCN and our company has been working on transmission lines for more than 30 years, we have the competence to deliver this project and we will use our best resources", he said.

TCN Embarks on Digital Transformation of Its Operations

By Eric Ene Ephraim

As part of its drive for increased Grid visibility, reliability, and transparency within the electricity value chain in Nigeria, Transmission Company of Nigeria, (TCN), has embarked on an aggressive digital transformation of its operations using internal homegrown solutions and vendor-procured applications.

The initiative is aimed at enhancing the efficiency and effectiveness of firm-wide operations with new platforms and tools, while upgrading existing systems, and automating routine tasks.

The Managing Director and Chief Executive Officer of TCN, Engr. Dr. Sule Ahmed Abdulaziz made this known during a presentation at the opening ceremony of the **9th Edition of Nigeria Energy and Exhibition Conference** with the theme: "Discovering Opportunities in the Nigerian Power Sector," on Tuesday, 20 September 2022, in Lagos.

The Regional Transmission Manager of Lagos Region of TCN, Engr. Ajiboye Oluwagbenga who represented the MD/CEO disclosed that prior to this time, grid control management was done through manual logs and exchange of emails. This he said, affected the smooth operations of the system, as only 6 out of 27 generators were visible to the National Control Centre (NCC).

According to the MD/CEO, for effective grid management and control, it was imperative for the Grid Controllers at NCC to see all parts of the grid and to accurately gauge situations on the grid in order to take necessary measures to guarantee grid stability and reliability.

Engr. Abdulaziz explained that TCN Management while waiting for the completion of the SCADA/EMS which will improve visibility level, decided to innovate by tasking her engineers to come up with a short-gap solution.

According to him, "Our Engineers came up with an in-house design that leverages on "Internet of Things (IoT)" to get data in near real-time from all the generators and some substations. Currently, almost all the generators on the grid are visible while we have substantially increased the number of transmission substations equally visible to NCC," he noted.

RTM, Lagos, Engr. Ajiboye Oluwagbenga

He said that as part of the digital transformation drive, TCN has reactivated its web- portal NSONG used for skeletal exchange of information. In his words, "We upgraded the NSONG portal to improve transparency. We built a Generation Dispatch Tool (GDT) and Distribution Dispatch Tool (DDT) for Generators, and Distribution Companies, to further enhance the ability of the NCC Grid Controllers to interact seamlessly and transparently," he said.

He noted that the platform has provided operational and guidance instructions for dispatch to GenCos & DisCos in order to ensure transparent and seamless communication

within the electricity grid. This, he noted, has made it possible for all activities and interactions between stakeholders to be logged in for the purpose of analysis, planning, and dispute resolution.

Engr. Abdulaziz further explained that GDT has assisted in the monitoring of generation performance, distribution load profile and matching of DisCo load profile to Generation availability and vice versa.

He reiterated the commitment of TCN to transmitting bulk electricity in a very efficient manner. In line with this, he said TCN was in the process of building two state-of-the-art control centers in Osogbo and Gwagwalada to house new SCADA/EMS infrastructure. He pledged that until they were completed, the in-house engineers would continue to innovate to meet the expectations of the DisCos, GenCos, and the Regulator.

The Permanent Secretary, Federal Ministry of Power, Mr. Temitope Fashedemi, FNIM, represented the Minister of Power, Engr. Abubakar Aliyu at the event, which featured high-level keynote sessions, panel discussions, and insightful information on gas-to-power capacity, decarbonization increasing electrification, and securing capital for power projects.

TCN stand at the event

Cross section of participants

Group photograph of Panel Discussants

Grievance Redress Mechanism Adopted to Fasttrack Project Delivery

By Jumoke Dare

L-R; GM, Transmission Services, Engr. Jimi Adetola, GM, Programme Cordination, Engr. Joseph Ciroma, GM HSE, Mr. Kangeh Cephas, RTM, Shiroro, Mr. Ernest Asuzu, and RTM, Lagos Region, Engr. Ajiboye Oluwagbenga

The Management of Transmission Company of Nigeria, (TCN), has through the World Bank Project Implementation Unit (PIU), presented the Grievance Redress Mechanism (GRM) Strategy Booklet to stakeholders in Abuja on Tuesday, 26th July, 2022. The General Manager, Transmission Services, Engr. Jimi Adetola, performed the ceremony on behalf of the Managing Director/Chief Executive Officer, Engr. Dr. Sule Ahmed Abdulaziz.

Delivering the opening speech on behalf of the MD/CEO, Engr. Jimi Adetola remarked that diverse grievances often arise in the course of project execution that have negatively impacted timely completion of most projects. He stated that there were many transmission lines that the Company has not been able to deliver due to unresolved conflicts or compensation disputes arising from Right of Way (RoW) issues.

Citing the 2x150MVA and 2x60MVA, 330/132/33kV Akure Transmission substation project as example, he disclosed that although the transformers meant to execute the substation project were ready, the 14km 132kV Akure-Ihovbor double transmission line which would bring bulk supply to the Substation has been stalled since 2016, due to Right of Way issues.

In his words, "We are unable to adequately transmit bulk supply to that environment inspite of the high capacity of the existing Akure Transmission Substation. This is because we have only one single line from Osogbo that cannot carry enough bulk power not to talk of transmitting to Ado-Ekiti," he emphasized.

He stressed the importance of the GRM Strategy to TCN at this critical time that the Federal Government was determined to achieve stability in power delivery to Nigerians.

In his contribution, the General Manager, Project Implementation Unit (PIU), Engr. Joseph Ciroma stated that as long as TCN required land for project execution, it was bound to

encounter problems with host communities.

He added that like most projects, donor-funded projects always specify timelines at the time of approval of facilities which necessitates expedited action so that the projects are delivered in a timely manner. In his words, "Many of these projects are, however, stalled due to conflicting interests, which explains why the World Bank has financed the GRM Strategy in order to provide ways through which TCN could resolve lingering conflicts that were delaying timely delivery of some of its projects.

Engr. Ciroma disclosed that the Booklet was produced in English, Hausa, Igbo and Pidgin English for ease of understanding within local communities. He also revealed that TCN has provided dedicated toll free numbers for aggrieved persons to call at any time for easy access and submission of complaints.

The Project Manager, World Bank, Engr Tinkin Bamalie said the GRM was one of the consultancy services under the Nigeria Electricity Transmission Project (NETAP). According to him, the initiative was financed by the World Bank, as part of the technical assistance efforts designed to improve the quality and impact of engineering procurement and work components

Participants

of the projects. He affirmed that the document was the strategic approach the Company intended to employ in addressing complaints affecting TCN projects.

The Managing Director/Chief Executive Officer of Sustanabiliti Limited, the Consultancy firm for the GRM Strategy Project, Mr Kayode Oluwagbuyi, who described the institution of Grievance Redress Mechanism as a step in the right direction, said that the document affirmed the commitment of TCN Management towards meeting its bulk electricity transmission mandate.

Participants displaying copies of the GRM booklets

NCC Boss Tasks Electricity Stakeholders To Cooperate With TCN For Grid Stability

By Joy Egbase

The General Manager, National Control Centre (NCC), Engr. Balarabe Abdullahi has tasked electricity stakeholders in Generation and Distribution Subsectors to collaborate with the Transmission Company of Nigeria (TCN) by operating within the Grid Code, Market Rules and other relevant ruling documents in order to further maintain and sustain Grid stability.

Group photograph of participants at the event

He made this known during a two-day Bi-Annual Joint Operations, Generation and DisCos Planning Meeting held on Tuesday, 27th September 2022, and hosted by Eko Electricity Distribution Company at the Civic Centre, Lagos. The meeting was to review generation data in terms of units' availability, water inflow into the reservoirs, transmission system/network challenges and relative availability of gas supply in the previous six months to make projections for the next six months.

In his welcome address, GM NCC revealed that power sector participants had all that was required to lead Nigeria to overcome the present predicament in terms of power availability. He said, "The bi-annual meeting is the forum where operational stakeholders come together to appraise operations of the grid, make forecast as well as recommendations that will improve operations. Outcome of the meeting is expected to form the foundation for making salient decisions on the power sector."

Engr Balarabe Abdullahi applauded stakeholders in the power sector for getting it right in the previous six months since their last meeting, even though there were some setbacks and set goals that were not met. He called on all stakeholders to think out of the box on means and ways to overcome the challenges. "Planning is an integral part of every human endeavor and it requires diligent and painstaking action to achieve a set goal," he said.

Earlier in her opening remarks, the Managing Director, Eko Electricity Distribution Company, Dr. Tinuade Sanda commended the Bi-Annual Joint Operations, Generation and DisCos Planning Meeting initiative and appreciated participants for being intentional about a better Nigeria by their attendance. She promised that Eko Electric would continue to do more to ensure improved service delivery.

In the course of the meeting, participants appraised the activities of the sector in the last six months and gave a fair score on the performance of players during the period, considering that there were generation challenges due to inadequate gas supply to most of the thermal generating stations and low water level in the hydro dams which greatly affected load supply to DisCos.

Participants commended the efforts of TCN Management in upgrading some overloaded transformers in the system and recommended that TCN Management should not relent in her effort to upgrade the remaining transformers in various stations as well as reinforce transmission lines, in view of improving power generation.

During the meeting, the effectiveness of communication in the system was deliberated on in view of the fact that communication is not reliable in most stations. It was recommended that adequate communication facilities like PLC, Hotline, PLS, Radio, Optic Fibre, internet and VOIP facilities be provided in all stations to connect NCC, GenCos, DisCos and all 330kV and 132kV transmission substations.

At the end of the meeting, a committee was constituted to monitor and report progress made on issues cited in subsequent bi-annual meetings.

TCN Board Commends NCC, Osogbo Region on Grid Maintenance

By Kayode Omideji

Members of the Board and NCC Management on inspection tour

Members of the Governing Board of Transmission Company of Nigeria (TCN), have commended the Management and Staff of National Control Centre (NCC) and the Osogbo Region for their relentless efforts in maintaining the national grid in spite of the enormous challenges in the system.

The Chairman of the Joint Committee of System, Market, Technical & Monitoring Operation of the Board, Mr. Ahmad Talba Imamuddeen gave the commendation recently when he led other members of the Committee on a visit to NCC and Osogbo Regional Office to inspect existing facilities, and address operational challenges in the grid.

Mr. Imamuddeen, explained that the Committee was set up by the Chairman of the Board, Engr. Bukar Bulama Buni, to resolve the issue of persistence system disturbance and other related challenges affecting grid operation in the country.

According to him, the data presented by the General Manager (NCC), Engr. Balarabe Abdullahi, had shed more light on the operational activities of the grid and would be of help for further research and to ascertain other likely challenges in the system.

He further stated that their first encounter with the substation was a remarkable one in view of the excellent detailed report on system collapses, and solicited for more support and cooperation from NCC and the Regional Transmission office, Osogbo, in ensuring improved electricity in Nigeria.

The General Manager NCC, Engr. Balarabe Abdullahi, conducted the Committee members around the facilities during which he explained the three departments that operate within the control room. These are; the Main Grid Controller, which is in charge of real-time operation of the grid, Systems Planning which provides load scheduling information on how to dispatch available units and the Transmission Electricity Market (TEM) which is in charge of interacting with DisCos on load off-taking to prevent system shut down.

He assured the Board members of cooperation in the provision of accurate information on operational activities and challenges in the system.

On his part, the Regional Transmission Manager (RTM), Osogbo Region, Engr. Mojeed Akintola, enumerated some of the achievements of the Region to include recent sealing of four transformers over oil leakage in Osogbo and Ife substations and ongoing work to energize Akure 330kV line in order to boost electricity supply to Ondo and Ekiti states.

At the Control Room, the Regional Operations Manager, in Osogbo, Engr. Yinusa Olaniyi informed the Board members that the ongoing construction in the 132kV Control Rooms in Osogbo 330/132/33kV substation, was needed for expansion to accommodate more equipment in the substation.
During the visit, the Committee inspected Control Rooms, Switchyards and other facilities. They also interacted with staff to further understand operational activities and functions of the Center.

Management & NUEE Agree on Better Welfare Conditions For TCN Staff

By Grace Sambe-Jauro

The Managing Director/Chief Executive Officer of TCN, Engr. Dr. Sule Abdulaziz, has reiterated his commitment to prioritize the interests, rights and welfare of staff of the Company, as part of efforts to sustain industrial harmony amongst staff and Management.

Engr. Abdulaziz gave the assurances during a meeting with the National Executives of NUEE on Thursday, 11th August 2022, at TCN Headquarters in Abuja.

According to him, the meeting was important as it enabled Union and Management to rub minds on critical issues that can facilitate industrial peace and harmony in the Company. He pledged Management's commitment to staff wellbeing and advancement, as reflected in the implementation of the 2021 promotions, as well as the recent hosting of Senior Citizens Day to recognize meritorious service by retired TCN staff.

The MD/CEO also remarked that at the beginning of the year, Management had organised training for technical and non-technical staff across TCN Regions, and would continue to do so in view of the significance of human capacity development in ensuring quality service delivery.

In the area of project implementation, the MD/CEO disclosed that the transmission grid expansion programme of TCN had recorded significant advancement in its implementation, "We have also made tremendous progress through the systematic implementation of our flagship program, the Nigerian Electricity Grid Maintenance Expansion and Rehabilitation Program (NEGMERP), which aims at expanding our grid network through diligent execution of network expansion projects; both Federal Government-funded and donor-funded. In addition to upgrading existing transmission lines and substations, we have prioritized maintenance and provision of spare parts in our stores, to ensure availability for grid stability while the expansion program is ongoing at the same time," he explained.

The MD/CEO, however, lamented the increasing incidence of vandalisation of power transmission facilities and insecurity, which have negatively impacted operations nationwide, asserting that, "We are not discouraged and I encourage you all not to give up on your duty to your fatherland. We are assuring you of our full support to achieve our collective goal of efficiently wheeling bulk power to distribution companies for offtake to Nigerians."

As partners in progress, the MD/CEO assured the NUEE Executives of Management's commitment to continuous maintenance of open-door policy for continued cross-fertilization of ideas channelled towards the collective pursuit of TCN's mandate.

In his remarks, the General Secretary of NUEE, Comrade Joe Ajaero, commended TCN Management for its feats, and pledged employees' maximum cooperation as they work together to achieve the Company's transmission mandate.

Group photograph of TCN management and NUEE Executives

R-L, ED ISO, Engr. Maman Lawal, ED F&A, Mr. Isah Dutse, MD/CEO TCN, Engr. Sule Abdulaziz, ED TSP, Engr. Victor Adewumi, and ED HR&CS, Barr. Ishaya Dodo

The Managing Director/CEO and Executive Directors Welcome New Employees

By Jumoke Dare

It was a moment to remember when Transmission Company of Nigeria (TCN) hosted an Induction and Orientation Ceremony for its newly employed staff.

The Management of TCN officially received a set of new employees during a two-day Induction/Orientation programme organised for them on Wednesday and Thursday, August 3rd to 4th, 2022, in the Company's Auditorium at the Corporate Headquarters, in Abuja.

The programme had in attendance the entire Executive and Senior Management team led by the Managing Director/Chief Executive Officer, Engr. Dr. Sule A. Abdulaziz.

In his welcome address, Engr. Abdulaziz congratulated the new staff on their appointment and advised them to take the opportunity as a privilege and to handle their respective assignments with the dedication they deserve.

He posited that the Company had high expectations from the new staff and charged them to utilize their potentials in becoming solution providers and game changers in the power industry especially at this critical time when the Federal Government and the Company's focus was on attaining sustainability in power delivery to Nigerians.

"Recently, there have been several changes in the power industry, and with the ongoing changes, the power sector has become more robust in some aspects, but with room for improvement in others. This means you all have roles to play and as such, are important to the industry," he adjured.

Engr. Abdulaziz further pointed out that "in TCN, what can distinguish you, is not your first degree or Master's Degree or even the foundation you had. What will distinguish you in this organisation is called 'the extra mile' put into work through dedication, hard work, humility and the desire to learn more. You will not be rewarded for what you are asked to do, you only get your salary for that, but you will definitely be rewarded for going "the extra mile," he said.

In his remarks, the Executive Director, Human Resources and Corporate Services, Barr. Ishaya Justin Dodo, stated that the induction exercise was to acclimatize and acculturate the new

staff to their roles in line with the Company's Vision and Mission and also to help them understand in a nutshell what TCN stands for in the power sector. He challenged them to study and internalize the copy of the Conditions of Service given to them so as to familiarize themselves with their duties, rights and obligations to the organisation. He further charged them to acquaint themselves with the acceptable Codes of Conduct that are spelt out in the Conditions of Service as violation will not be tolerated.

On the sidelines of the induction program, Barr, Dodo disclosed that the recruitment exercise was imperative to usher in highly skilled and equipped personnel with professional, academic and cognate experience, who will fill the vacuum in the system due to retirements, death, dismissal and/or termination of appointment.

Transmission News engaged a couple of the new employees, and they expressed excitement at the opportunity the employment has offered them and promised to be diligent and contribute their quota to the Company's growth.

Cross section of new employees and other staff of TCN

NERC Signs MoU With NOA to Sensitise Electricity Consumers on Rights and Obligations in NESI

By Uloma Osuagwu

L-R, NERC's Commissioner of Consumer Affairs, Hajia Aisha Mahmud, Commissioner Legal, Licensing and Compliance, Mr. Dafe Akpenye, and DG NOA, Dr. Garba Abari

The Nigeria Electricity Regulatory Commission (NERC), has signed a Memorandum of Understanding (MOU) with the National Orientation Agency (NOA), to sensitise electricity consumers on their rights and obligations in the Nigerian Electricity Supply Industry (NESI). This is in order to bridge the apparent trust deficit in the power sector between Distribution Companies (DisCos) and consumers.

NERC Chairman/CEO, Engr. Sanusi Garba, who was represented by the Commissioner Legal, Licensing and Compliance, Mr. Dafe Akpeneye, and Director, National Orientation Agency, Garba Abari signed the MoU at the Commission's Headquarters, in Abuja on Thursday, July 21, 2022.

While welcoming participants, Mr. Dafe said the partnership with NOA was strategic, considering the awareness gap and heterogeneous population of the country. He said being the only electricity regulator in the sector, there was need for synergy with other agencies, if NERC would achieve its mandate of sensitizing the population on issues affecting the industry especially on safety and electricity theft. In his words, "We have realized that there is no better partner to work with us on this issue than the NOA. We see you as the vehicle through which Nigerians can be informed of our core activities. Our sector is a very specialized one, therefore, there is need for Nigerians to be properly informed on how electricity gets to them and how consumers' interests are protected."

Dafe decried the high level of ignorance among Nigerians, particularly in technical areas like issuance of licenses to prospective investors, how electricity supply gets to homes, consumer's safety, electricity theft, rights and obligation of electricity consumers, among others. According to him, the cooperation was not only vital in creating awareness and participation among Nigerians on the need to be sensitized but also creating an avenue for understanding between the Government, consumers and service providers to be on the same page.

He noted with satisfaction that the MoU signing came a day after the Electricity Bill seeking to replace the Electric Power Sector Reform Act 2005 was passed into law. The new law, he explained, has improved on the former and portends great opportunities for investment in the sector as well as offer protection to electricity consumers in the country.

He further expressed the hope that the partnership between

the two agencies would create the expected enlightenment for Nigerians across the 774 local governments and that there was no better agency to partner with in national communications and orientation than the NOA.

Responding, the Director General of NOA, Dr. Garba Abari, said the issue of electricity continued to dominate national discourse, in spite of the efforts Government has put into addressing generation, transmission, and distribution of power. He also noted that, "while it is proper to be knowledgeable about the obligations and rights of consumers, it is equally important to know more about the regulator, and the MoU will do justice to address that knowledge gap."

Dr. Abari further explained that part of the mandate of the NOA was to propagate, make people understand, and publicise Government policies, programmes and activities, affirming that Nigerians through NOA would be fully informed and mobilised for better understanding towards the common direction of NERC's vision and mission. He pledged that NOA would intensify efforts at using the available communication tools to bridge the knowledge gap and trust deficit in the power sector.

In her remarks, the NERC's Commissioner of Consumer Affairs, Hajia Aisha Mahmud, said the MoU between the two agencies was long overdue and disclosed that the development would strengthen the relationship between NERC and NOA for the betterment of Nigerian electricity consumers; she said, "We are happy to note that NOA has representation in all the 774 Local Government Councils, therefore, this MoU is the right step in the right direction and we hope that Nigerians would get to know about us and in the process, get to know about their rights and what NERC is out to achieve."

She also disclosed that NERC had recently signed similar MoU with the Federal Competition and Consumer Protection Commission (FCCPC) on resolving consumer complaints.

NAPTIN Signs Training Contract With APUA

By Lawal Muhammad

L-R, DG APUA, Engr. Abel Didier TELLA, and DG NAPTIN, Mr. Ahmed Nagode

The National Power Training Institute of Nigeria (NAPTIN), has signed a training contract with Association of Power Utilities in Africa (APUA).

The contract was signed during the 11th Session of the Statutory Steering Committee Meeting of the African Network of Centres of Excellence in Electricity under the auspices of APUA, in Diamniado Dakar, Senegal. Under the contract, NAPTIN being a Centre of Excellence (COE) under African Network of Centres of Excellence in Electricity (ANCEE), shall train 30 (thirty) members of staff of Eswatini Electricity Company (EEC) on two Distribution Sector Courses, namely, Maintenance/Troubleshooting of Distribution Systems and Distribution Lines Maintenance.

Speaking at the Steering Committee meeting, the Director General of the Association of Power Utilities in Africa (APUA), Engr. Abel Didier TELLA, acknowledged and commended NAPTIN's relentless efforts to position and align itself with the ideals of APUA's ANCEE Project.

Responding, the Director General of NAPTIN, Mr. Ahmed Bolaji Nagode (FCIPM, FNIM), expressed confidence in the implementation and coordination of training activities by the ANCEE coordinating unit.

Mr. Nagode also shared his optimism on NAPTIN'S continued efforts towards improving the performance of the electricity sector by offering quality skills acquisition training programmes.

NAPTIN is one of the COEs on ANCEE'S capacity building agenda, which targets the contractual delivery of staff training for Power Utilities in Angola and Botswana under ANCEE Framework. The partnership is another golden opportunity for NAPTIN to increase regional exchanges through the strengthening of technical and managerial capacities of Human Resources in power utilities across the African Continent.

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Communities Sensitized on Inherent Dangers of Right of Way Violation

By Maimuna Isah-Ladan, Ogechukwu Uzor & Yusuf Inuwa

Chairman, Committee on Monitoring and Reduction of Encroachment on Right of Way, and GM, Health, Safety and Environment, TCN, Mr. Cephas Kangeh

In furtherance of its commitment to finding a lasting solution to the perennial challenge of encroachment on TCN's transmission lines nationwide, the Transmission Company of Nigeria, through its National Committee on Monitoring and Reduction of Encroachment on TCN's Right of Way (RoW), has embarked on nationwide sensitization tour, to enlighten the public on the dangers that are inherent in erecting structures near/within TCN's Right of Way, and also to solicit support from relevant stakeholders and traditional rulers in its bid to curb the menace.

Speaking to press men in Kano, the Chairman of the Committee, and GM Health and Safety Environment, Mr. Cephas Kangeh lamented the enormity of the disturbing trend in which TCN Right of Way was violated across the length and breadth of the country and used for business or religious structures, and living quarters. Similarly, illegal shanties were being constructed indiscriminately at the bases of transmission towers and under the transmission lines themselves, without regard to safety and health considerations.

He stressed the negative impact of the encroachment challenge noting that, "encroachment is not only a disturbance to our maintenance activities, it is most importantly hazardous to health and safety of life and properties due to the electromagnetic emissions from lines. Similarly, a line that snapped could cause monumental loss of lives and properties instantly."

Speaking further on the need to desist from encroachment on TCN's Right of way, the Chairman described building of structures under transmission lines as "an untimely call to eternity."

He noted that TCN as a responsible company was not only concerned that encroaching on the Right of Way made it difficult for its linesmen to access equipment for maintenance work, but also the health hazards of building under high tension installations. He said it could lead to numerous health problems like cancer, stunted growth in children, miscarriages, barrenness etc. He added that in a situation where there was accidental line snapping, the consequences were deadly, citing the case of a line cut that occurred in Farakwai, Kaduna State, 23 years ago, where many lives were lost and scores injured.

Kangeh, who reiterated that the objective of the visit was to fine-tune modalities for addressing encroachment under TCN's Right of Way, explained that the safe and approved distance on both sides of a 330kV transmission line was 25 meters, totalling 50 meters, on a 132kV line was 15meters on both sides totalling 30 meters while on both sides of 33kV line was 5.5 meters totalling 11 meters.

The Committees on Monitoring and Reduction of Encroachment on TCN Right of Way at national and regional levels, were setup by the Management of TCN, and charged with the responsibilities: to collect and collate data on areas of encroachment; Respond to encroachment through writing letters, enlightenment and any other means deemed necessary; liaise with relevant national and state authorities on possible ways of evacuating persons encroaching on TCN

Right of way; and to undertake any relevant activities to protect TCN Right of Way from being encroached upon.

Port-Harcourt Region

In continuation of the sensitization outreach in the Port-Harcourt Region, the Committee paid a visit to the Nigerian Security and Civil Defence Corps (NSCDC), where Rivers State Commandant Mr. Michael Ogar, decried the prevalence of the RoW challenge and the severe safety implications. He cited the case of a 33kV line which snapped and killed a number of persons in Port Harcourt, and assured the Committee of his Command's readiness to work with TCN in combating the menace of encroachment on RoW.

According to him, "We will cooperate with the Committee to enforce Federal Government instructions on encroachers, including bulldozing of properties. This is because power is the backbone of the society, and we will prioritize the protection of TCN infrastructures."

The Committee also visited the Rivers State Ministry of Environment where the Permanent Secretary represented by Pastor Emmanuel Fienemika, Director, Inspectorate and Enforcement of the Ministry promised to collaborate with the Committee. He said that the Ministry would set up a viable committee to interface with TCN's Committee in fighting against encroachment.

Kaduna Region

At the Kaduna State Regional and Urban Planning Agency (KASUPDA), and Office of the Commandant of the NSCDC, the Director General KASUPDA, Ismail Umaru Dikko, who was represented by the Director of Development Planning, Mr. Bello Musa Ibrahim, said the situation was critical and pledged to address the issue of encroachment. He noted that there was high proliferation of buildings under high tension lines which was a cause for concern. He said the agency was ready to assist TCN in curtailing the menace.

Speaking during the visit, the Chief Town Planning Officer, Mercy Ayuba, advised TCN to barricade sites where KASUPDA had carried out demolition to recover TCN assets, and indicate TCN's ownership of the land with appropriate notices to trespassers to stay away so as to reduce the trend where evicted persons return to same site after removal.

At NSCDC, the Commandant, Mr. Idris Yahaya Adah, assured members of the Committee of NSCDC's commitment to the protection of critical national assets of which TCN facilities and installations are a major part. He also reiterated the stand of the service to post officers to TCN holdings, to monitor the activities of encroachment and vandalism. He also presented TCN with a plaque of appreciation for the cordial relationship between TCN and NSCDC.

NSCDC, Commandant, Kaduna State, Mr. Idris Yahaya Adah, and members of the committee

Committee members and Kano State Bureau for Land Management,

Middle: Engr. Cephas Kangeh, flanked by NSCDC officials and other staff of TCN, PortHarcourt Region

Kano Region

At the Kano State Bureau for Land Management, the Permanent Secretary Dr. Zainab Ibrahim commended the Committee for the visit and assured them of the support of the Bureau to ensure that the menace of TCN land encroachment and other RoW violations were curtailed with the view to eliminating them in the State.

The Committee also paid a courtesy call on the Nigeria Security and Civil Defense Corps (NSCDC), Kano Command as well as the State Security Services to solicit their support in curbing the menace.

System Operations Hold Workshop for Staff on the Implementation of SCADA/EMS and Telecoms Project

By Kazah Bili Akau

Executive Director, ISO, Engr. Mamman Lawal

As part of efforts to achieve its overarching goal of implementing Government's initiatives to improve power supply in the country, the Transmission Company of Nigeria (TCN), has put in place diverse measures, including technology and equipment upgrades. One of these strategies is the procurement and installation of Supervisory Control and Data Acquisition System (SCADA), a monitoring, communication and control system which is critical to the effective and efficient operation of a complex grid system.

Stakeholders of the Nigerian Electricity Supply Industry (NESI) are familiar with the fact that the absence of a functional SCADA system in the power sector has been a major drawback to the march towards an efficient electricity market in the country. It is against this background that the efforts of the present Management of TCN with the support of the Federal Government to frontally address the SCADA challenge can be fully appreciated.

In preparation for an effective deployment of SCADA/Emergency Management System (EMS) and telecommunication project, a two-day workshop for engineers of the Company was organized recently at Uyo, Akwa Ibom State.

Declaring the Workshop open, the Executive Director, Independent Systems Operations, TCN, Engr. Mamman Lawal, charged the participants to work hard and be detailed to ensure the success of the project. He stressed its immense importance to the effective and efficient operations of the Nigerian Electricity Supply Industry (NESI). He further enjoined the in-house engineers to ensure the strict observance of the cardinal principles of successful project implementation.

On her part, the General Manager, System Operations, Engr. Nafisa Ali, highlighted the benefits of SCADA/EMS and its different functions. As a control function, it provides real-time monitoring and control. It also provides the automation of power system, including automated interfaces and electronic tagging, efficient automatic generation control, and load frequency control, across multiple areas.

As operating function, she said SCADA/EMS provides economic and optimal operation of the power generating system and improved quality of operators' decision making. Engr. Nafisa also said that SCADA would provide optimal utilization of the transmission network – power scheduling interchange between areas, optimal allocation of resources, and immediate overview of the power generation, interchanges, and reserves.

She further noted that as a planning tool, SCADA system would provide improved quality of supply and system reliability, forecasting of load and load patterns, generation scheduling based on load forecast and trading schedules, maintenance of reserves and committed transactions, calculation of fuel consumption, production costs, emissions, and others.

The General Manager, Market Operations, Engr. Edmund Eje, who was represented by Engr. Umar Hassan, Manager, (Technical Data Administration), stated that with an efficient and reliable SCADA/Communication backbone, the Market Operations Department can develop and integrate existing applications to enhance productivity and efficiency, automate meter reading, carry out energy audit, query meters remotely, and capture minute-by-minute energy consumption as well as hourly meter consumption and meter faults, thereby reducing energy loss.

He enumerated other advantages of the SCADA system to include; detection of Generation Companies (GenCos) that are not generating in line with generation agreement, and can enable the remote downloading of energy meter profiles as well as provide effective communication network, which would aid adherence to billing cycles among others.

GM, System Operations, Engr. Nafisa Ali

He reiterated that, in grid management, visibility provides better awareness of the health of the grid and is one of the key means of preventing future collapses. The importance of grid visibility he noted, cannot be overemphasized as it ensures the optimization of the grid.

The new SCADA/EMS and telecommunications project is being coordinated by the Project Monitoring Unit of TCN and funded by the World Bank. The scope of the project covers the procurement of Control Centre equipment for two National Control Centres, at Gwagwalada and Osogbo; one back-up Supplementary National Control Centre in Shiroro; and three Regional Control Centres, at Benin, Ikeja West, and Shiroro.

The procurement of Remote Consoles at the six Regional Operational Centres in Abuja, Bauchi, Enugu, Kaduna, Osogbo and Port-Harcourt as well as the general architecture of the new SCADA system would have a robust data storage/centre at the Control Centres that would house all TCN market operations and ICT applications.

Participants after the workshop

Osogbo Region Step Up Power and Non-Power Projects

By Kayode Omideji

Ongoing work on the plinth of a proposed 4T7 300MVA 330/132kV transformer at Osogbo Sub-Region

The Assistant General Manager (Transmission) Osogbo Sub-Region, Engr. Kolade Adelakun has disclosed that the Sub-Region has reached advanced stages in the execution of some power and non-power projects in the Region. He made this disclosure in a recent interview at Osogbo Sub-Region 330/132kV switchyard.

He stated that TCN Management considered it strategically necessary to embark on some power projects in the sub-region in order to boost wheeling capacity. He emphasized the need to continue to ensure increase in capacity, noting that on completion of the projects, there would be improved bulk power supply for Ibadan Electricity Distribution Company (IBEDC) to offtake for its customers in Osun state and neighbouring states.

Speaking specifically on an ongoing transformer installation, he revealed that the installation of a 300MVA 330/132kV transformer commenced recently, adding that TCN engineers were already preparing the plinth on which the Transformer would be erected.

He further stated that the processes for the installation of a 100MVA, 132/33kV transformer project had also commenced in the substation, adding that the transformer plinth for the 100MVA transformer was ready and awaiting the delivery of the transformer for installation. A third transformer, a 60MVA 132/33kV capacity transformer, he noted, was already on the plinth and that installation works was already ongoing and would soon be completed for commissioning.

Speaking on other ongoing projects in the sub-region, Engr. Adelakun, stated that the construction of a four-story office complex was already at completion stage. He explained that the building would provide more conducive work environment for the regional staff.

He appreciated the Management of Transmission Company of Nigeria (TCN) led by the MD/CEO, Engr. Dr. Sule Ahmed Abdulaziz, for the consistent support towards the Region, noting that without it, none of the projects would have been a reality.

Port-Harcourt Region Kick starts AutoCad Training for Engineers

By Ogechukwu Uzor

In fulfillment of his promise to invest adequately in training and capacity building for staff of Port-Harcourt Region of Transmission Company of Nigeria (TCN), the Regional Transmission Manager (RTM), Engr. Dr. Thomas Inugonum, has organized a five-day intensive AutoCad training for engineers in the Region.

RTM, Port-Harcourt Region, Engr. Dr. Thomas Inugonum

Engr. Inugonum who spoke during the opening ceremony said that the AutoCad training is part of efforts by the Port-Harcourt Regional Management to ensure continued human capacity development and directed all heads of departments to ensure proper coordination of departmental trainings.

The RTM noted that learning the use of Autocad by Engineers will help them carry on with their work more efficiently, and help them to know how to translate conceived and planned projects into a flow diagram, showing what the project is all about as a block flow diagram. It will also help them know how to bring out the existing circuit in block diagram. The Autocad training he further noted, will enable TCN engineers in TSP and ISO to decipher and appreciate the single line diagram of substations.

Speaking during the program, the Principal Manager, Transmission, Engr. Raymond Ubani who coordinated the training described the AutoCad training as very relevant to the industry, both in system design drawing and system maintenance. "AutoCad is a universal software for engineers. The essence of this AutoCad training is to make the work easy and save time as the traditional means of drawing is more cumbersome and time consuming," he noted.

He further explained that drawing was an integral part of the job description for TCN engineers especially in system design, operations and maintenance. "This helps them to know the various layouts of the stations and how the stations are interconnected," he said.

The week-long intensive training programme in Port-Harcourt was extended to all the six substations of the Region.

Cross section of participants at the training

Live Lines Crew of TCN and their Mode of Operation

By Omideji Kayode & Tracy Kadiri

The System Lines and the Live Lines are two units in TCN responsible for conducting, re-conducting and general maintenance of the Transmission Lines. The former works on off circuit transmission lines while the later works on live or energized circuit.

In this highlight, the emphasis will be on the Live Lines Department:

Within the context of electricity transmission services generally and to the Transmission Company of Nigeria (TCN) in particular, the importance of Live Lines cannot be overemphasized. Since the establishment of the Live Lines unit as a substantive department in the Company, its activities have in no small measure facilitated the achievement of reliability, sustainability and stability of the National Grid.

The history of Live Lines in the transmission of electricity in Nigeria dates back to 1969 with the creation of Live Lines Crew by Canadians with a temporary base in Kainji, Niger State, Nigeria. The Crew was later decentralized and moved to Osogbo in 1973. In 1980, a section of the Crew was moved to Kaduna thus bringing to two, the number of bases for Live Lines Crew in the transmission subsector of the Nigerian power sector. The decentralization of the Live Lines Crew was for the purpose of achieving easier and more effective operational maintenance of the network.

In terms of operational coverage, the Kaduna Crew maintains Kaduna axis, and the Northern part of the country, while the Crew in Osogbo Region handles the southern part of the country. Each Crew maintains 132kV lines in their axis separately, while both come together to handle 330kV lines in the country, due to the enormous work involved in the maintenance of 330kV lines.

Without any doubt, the importance of Live Lines crew to maintaining the National grid cannot be overemphasized. Indeed, they are akin to a Quick Response Intervention Squad for the transmission system during emergencies. In the same vein, they reduce revenue loss for the Company. They work on live lines and therefore ruling out the need for power outage. The uniqueness of their services can be better appreciated against the background that, they carry out operational maintenance without interrupting the power supply. In carrying out maintenance activities, the crew adopts the Bare-Hand Method and Hot Stick Method.

Live Lines crew replacing glass disc insulator with polymersilicon composite insulator

Speaking recently in an interview, Engr. Tech Enahoro Ohumu, Principal Manager (Live Lines) Osogbo Region, explained that the Bare Hand technique was developed in 1960 and is used to extract Insulators from the Line without power interruption. This method is undertaken by wearing special protective suits and gloves that provide a shield and prevents discomfort from static charge when touching the live power lines.

On the other hand, the Hot Stick method uses steam pole that is made of an insulating material, with tools and fittings on the ends that allows linesmen to manipulate energized conductors. The pole is attached to a Tower Yoke on the Cross arm, and fixed to the Line. This transfers the weight of the Line to the Stream Pole and when transferred, the Insulator is disengaged from the Line. A rope is used to set the Glass Disk Insulator aside while it is replaced with a Polymer Composite Insulator on the Line.

Live Lines crew at work

Engr. Tech Ohumu while commending the Crew for its achievements in recent times, informed that they have successfully replaced broken insulators on the Kainji-Birnin-Kebbi axis, an area prone to incessant tripping due to excessive heat; changed glass insulators on Egbin-Ikeja West to polymer to reduce the effect of accumulation of dirt caused by carbon emissions from some companies that are located along the axis, which causes incessant trippings; replacement of glass insulators on the Benin-Omotosho; Benin-Egbin B5N and B6N in the Southern axis to polymer to avoid spindles corrosion of the lines which causes detachment of the line conductors that results to tripping of the National Grid.

In conclusion, he surmised that each Region has peculiar issues in terms of Live Lines maintenance, stating that while the North is prone to broken insulators due to excessive heat, the South is noted for broken insulators due to corrosion challenge. He also asserted that tripping of Lines translates to revenue loss and sometimes loss of life which makes the job of the Live Lines Crew very crucial to the operations of TCN as it saves revenue, lines and minimizes outage due to maintenance.

Regarding safety, Engr, Ohumu said, the issue of safety in Live Lines Crew operations was extremely important and non-negotiable due to the sensitivity of working on lines that carry high voltage electricity. He noted that a simple mistake occurring during a maintenance exercise could lead to loss of life or the worsening of the situation being remedied, and so every member of the live line crew was safety conscious.

Introduction to Electricity Market Regulations, Market Rules, and Grid Code

By Ali Bukar Ahmed, GM, Regulation, Compliance

WHAT IS REGULATION?

Regulation is the process of controlling, administering, directing, governing, managing, monitoring, ordering, organizing, overseeing and supervising and controlling things, activities in accordance with rules, conventions, decree, dictate, code, rules and statute.

WHY REGULATION?

In the Electricity Industry, Regulation is primarily designed to address market development, sanity, dominance, and indiscrimination and market failure to deliver desired goods and associated quality, whether these are technical, economic, social or environmental.

The primary driver for regulation is proper competition and to prevent the growth of a dominant group or single utility servicing either function, essentially regulation is an attempt to keep prices down.

In non-liberalised markets, the degree of regulation is a direct political decision, and is explicitly connected to policy aims.

REGULATORY REFORM

It is defined as the establishment of an autonomous entity responsible for regulatory oversight and some roles in decision making.

In any power sector, there are policy-making, regulatory and service provision functions to be fulfilled.
Policy making involves charting the strategic direction for the sector.

Regulation involves overseeing the sector to ensure that the strategic direction is followed and enforced.

Service provision involves the actual implementation of the strategic direction.

REGULATION OF THE ENERGY SECTOR

Whether it is a government dependent or a regulator who has the primary role, there will often be other bodies with a role in regulating the industry.
The following bodies can all be involved in regulating the energy industry;

- Central government departments
- Specialist utility or energy regulatory agencies
- Environmental regulators
- Courts and tribunals

MINISTER VS REGULATOR: WHO DOES WHAT

MINISTER OF POWER/ ENERGY	REGULATORY COMMISSION
Translates General Government into sector policy	Issues and enforces licenses
Approves major Capital Expenditure	Sets prices when there is no competition
Mandates fuel stock for National Energy and Security reason	Sets Service standards and monitors compliance
Controls imports where necessary	Arbitrate Disputes
General Supervision and coordination of the sectors reforms and activities	Provide information and advise the Ministry

STRUCTURES NEEDED FOR SUCCESSFUL REGULATION

Electricity industry structures vary widely from country to country. The main disparities are in terms of:

- Degree of integration (Vertical and or/ horizontal)
- Nature of facility ownership (Public or Private)
- Level of competition
- System establishment and development

UNBUNDLING AS A NECESSARY MEASURE FOR SUCCESSFUL REGULATION

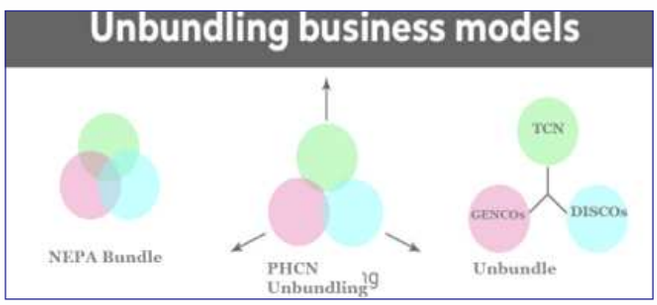
Whatever the electricity supply industry structure is and its level of development, it performs four functions which are: Generation, Transmission, Distribution, and Supply (Retail). All or any of these functions may be privately or publicly owned.

WHAT IS UNBUNDLING?

It is a type of structural reform that involves the separation of core functions performed by power utilities or owner companies.
OR
It is a business process where a series of products or segments in a value chain are separated or broken down to provide better value by removing the parts of the value chain that are

less valuable to the customers and keep those that in a period of time, consumers more.

Power system unbundling is of two types, namely; Vertical unbundling and Horizontal unbundling.



TYPES OF REGULATION

Command and Control: this is typically the imposition of standards backed up by legal sanctions if standards are not met. The law is therefore used to define and prohibit a certain type of activity or force certain type of action. Standard can be set either through legislation or by regulators empowered by regulation to define rules.

Advantages: it can often be implemented quickly, sets out clearly defined limits and informs on when either the government or the regulator is to act decisively.
Disadvantages: it can be heavy-handed and complex

TYPES OF REGULATIONS

Self-Regulation: This is DIY (Do-it-Yourself) command and control. It often takes the form of a business or trade association developing its own rules of performance. Which it also monitors and enforces. There can be some government oversight of the regulation, but as a rule self-regulation is often seen as a way of business taking pre-emptive to avoid government intervention.

Advantages: High level of commitment from the businesses involved, well informed and comprehensive nature of the rules that are set. It is more flexible than government C&C as it does not require legislation.

Disadvantages: It can be seen as undemocratic, closed or isolated to outside scrutiny and open to abuse by the very interests who devise the rules. It is open to challenge by outside interests who may feel the standards and rules are not primarily geared towards reducing the impacts undesirable activities.

Incentive Based Regulation

It induces a regulated entity to limit or stop an undesirable activity by imposing taxes or granting subsidies. In other words, it is a carrot and stick approach to ensure a socially or environmentally desirable end. This type of punishment and reward regulation operates in a mechanical way, so reducing the scope for regulatory discretion, which in turn reduces the possibility of regulatory capture. It is also allows the company a degree of flexibility in deciding whether to conform to the rule or to accept the punishment.

An incentive is any policy, rule pricing mechanism or procedure that seeks to modify the behavior of participants by changing the marginal costs or marginal benefits associated with particular decisions and activities.

Incentive-based regulation tries to reward the utility with increased profits for reducing costs and improving services in a more pronounced fashion than other forms of regulations.

HOW TO APPLY INCENTIVE-BASED REGULATION

In Incentive based Regulation, you must choose the units of measurement, set the baseline level, choose targets for improvement and or maintenance and then apply incentives and penalties. One type of performance –based regulation is PBR.

Performance-Based Regulation: In performance-Based Regulation, incentives are tied to improvements in utility performance, price reduction and service quality improvement. PRB is more reliant on external performance standard and less sensitive to company specific actions.

Advantages: reduces operations and maintenance costs, improve system reliability, sets specific goals for utility management to focus on, and stimulates competition where real competition may not be practical, it gives utilities the opportunity of to making their own choices on how to respond to regulations.

Disadvantages: Incentive on certain items and not on others may divert attention to those areas where an incentive is offered to the detriment of other areas that may be equally important. If the benchmark and targets from the onset are wrong, they could benefit the utility or the customer to the disadvantage of the other party.

THE APPROPRIATENESS OF APPLYING ANY TYPE OF REGULATION

The appropriateness of applying one of the three types of regulations depends on the available competencies at the regulatory and private sector levels, and the historical make-up

of the sectors involved.

Electric Power Sector Reform Act; Is an act to provide for the formation of companies that took over the functions, assets and liabilities of the National Electric Power Authority (NEPA). To develop competitive electricity markets, establish the Nigerian Electricity Regulatory Commission; provide for licensing and regulation of the Generation, Transmission, Distribution and Supply of Electricity; enforce such matters as performance standards, consumer rights and obligations; provide for the determination of tariffs; and provide for related matters- Enacted by the National Assembly of the Federal Republic of Nigeria, 11th March 2005.

THE GRID CODE

The Grid Code contains the day-to-day operating procedures and principles governing the development, maintenance and operation of an effective, well-coordinated and economic Transmission System for the electricity sector in Nigeria. (Grid Code 1.3.1).

The code is designed to: (a) Facilitate an efficient production and supply of electricity for all Users of the Transmission System and TCN itself, without any act of discrimination between Users or class of Users. (b) Facilitate competition in the generation and supply of electricity in the country. (Grid Code 1.3.2.).

For complete understanding of the operation of the Nigeria Electricity industry post-deregulation, this document has to be read in conjunction with the market rules, metering code, distribution code and other documents relating to other operational aspects of the industry. (Grid Code 1.3.3).

GRID CODE APPLICATION

The Grid Code shall apply to TCN and Users of the Transmission System. TCN shall be responsible for the implementation of Grid Code. All Users of the System Operator and the Transmission Service Provider shall comply with the Grid Code and assist TCN in this regard. Users must provide all the required information and reasonable rights of access, service and facilities necessary for implementation of the Grid Code. (Grid Code1.4.1.).

If any User has any difficulty in complying with any of the provisions of the Grid Code, the User shall immediately, without delay, inform the Nigerian Electricity Regulatory Commission and TCN, and shall remedy his non-compliance promptly. (Grid Code1.4.1a.).

Consistent failure in compliance with the Grid Code may lead to disconnection of the User's plant, Equipment or Apparatus. (Grid Code1.4.1b.).

Consistent failure by the System Operator or the Transmission Service Provider to comply with the Grid Code shall be dealt with under section 4.5 (Grid Code 1.4.1c).

STRUCTURE OF THE GRID CODE

THE MARKET RULES

Pursuant to Section 26(2) of the Act, the Minister recommended these Rules to the President and the President approved same by order no. 3 of 2010, dated 15th February, 2010, published in the Federal Gazette of 17th February, 2010.(M.R 1.3.3).

These Rules have been made pursuant to Section 26 of the Act, which provides that the Minister shall recommend to the President, the approval of market rules to be developed by the System Operator for, amongst other things, the establishment and governance of markets related to electricity and ancillary services (M.R 1.3.1). IT IS NOTED THAT THE ACT ENVISAGES The System Operator encompassing the Market Operator. (M.R 1.3.1 (a).

APPLICATION OF THE MARKET RULES

Section 71(11) of the Act provides that every License shall be deemed to contain a provision that the licensee complies with these Rules to the extent applicable to the licensee. Accordingly, these Rules shall apply to, and bind all Participants who hold a licence, the TSP, the System Operator and the Market Operator.(M.R 1.4.1).

These Rules shall also apply to and bind all persons who are registered with the Market Operator as Participants or Applicant Participants, notwithstanding that such persons do not hold a Licence. (M.R 1.4.2) .

The persons referred to in the preceding Rules 1.4.1 and 1.4.2 shall be deemed to have entered into a contract with one another under which each such person agrees to observe and perform these Rules so far as they are applicable to such person. (M.R 1.4.3).

The Market Rules shall have the effect of a contract between each participant and the MARKET Operator by virtue of the execution by the Market Operator and each participant of a Market Participation Agreement under which the Market Operator and each participant shall agree to observe and perform the requirements of these rules so far as they are applicable to the Market Operator and the participants. (M.R 1.4.4).

STRUCTURE OF THE MARKET RULES

Style: Parts broke down into sections

- Introduction and Objective
- Interpretation and Condition precedents
- System Operator and Market Operator
- Participation, Admission, Withdrawal and Termination
- Contracts, Generation Adequacy and Power Procurement during the Transition Stage
- Submission of Scheduling and Dispatch Data and Contract Nomination
- Settlement and Payment System During the Transitional Stage
- Settlement and Billing during the Medium Term
- Communication
- Governance, Administration and Enforcement
- Appendixes

OBJECTIVES OF THE MARKET RULES

The objectives of these rules are to establish and govern an efficient, competitive, transparent and reliable market for the sale and purchase of wholesale electricity and Ancillary Services in Nigeria and to ensure that the Grid Code and the Market Rules work together to secure efficient co-ordination and adequate participation. (M.R 2.1).

OTHER RULING DOCUMENTS IN NESI

- License Conditions
- Market participation Agreement (MPA)
- Grid Connection Agreement (GCA)
- Transmission Use of System Agreement (TUoS)
- Transmission Project Agreement (TPA)
- Ancillary Service Agreement (ASA)
- Power Purchase Agreement (PPA)
- NERC orders and directives
- Metering Code

RELATIONSHIP BETWEEN THE GRID CODE, THE MARKET RULE AND OTHER RULING DOCUMENTS

These Rules complement and supplement the Grid Code and should be read in conjunction therewith. Together these two documents constitute the rules for the planning, dispatch and operation of the system and the administration of the Wholesale Electricity Market in Nigeria.(M.R 1.5.1).

These Rules shall be interpreted so as to avoid, to the extent reasonably possible, findings of inconsistency between these Rules and the Grid Code; but where there is such an inconsistency and it relates to commercial issues, these Rules shall prevail and where it relates to technical and/or engineering issues the Grid Code shall prevail. (M.R 1.5.2).

Operating Procedures and Market Procedures complement and supplement these Rules. General provisions relating to

Operating Procedures and Market Procedures are made in Rule 4. 1.5.4. In the event of any inconsistency or conflict, the provisions of these Rules, excluding its Appendices, shall prevail over the provisions of the Appendices or the Market Procedures. (M.R 1.5.3).

The objectives of these Rules are to establish, and govern an efficient, competitive, transparent and reliable market for the sale and purchase of wholesale electricity and ancillary Services in Nigeria and to ensure that the Grid Code and the Market Rules work together to secure efficient co-ordination and adequate participation.

RULING DOCUMENTS HIERARCHY

In the event of any inconsistency between this Grid Code and the Act establishing the TSP or the System Operator or a Licensee that is a User, the Act shall prevail to the extent of such inconsistency. (Grid Code 2.7.1.).

Nothing in this Grid Code is intended to or shall derogate from any license obligation of a Licensee. (Grid Code 2.7.2).
If any provision of this Grid Code should be found to be unlawful or wholly or partially invalid for any reason, the validity of all remaining provisions of this Grid Code shall not be affected. (Grid Code 2.7.3).

Grid Code 2.7.4. Provides that "If part of a provision of this Grid Code is found to be unlawful or invalid but the rest of such provision would remain valid if part of the wording were deleted, the provision shall apply with such minimum modification as may be necessary to make it valid and effective" (Grid Code 2.7.4 a) and most closely achieves the result of the original wording but without affecting the meaning or validity of any other provision of this Grid Code (Grid Code 2.7.4 b).

HOW TO DEAL CONFLICT AND INCONSISTENCIES IN THE RULING DOCUMENTS

In the event of any conflict between the provisions of this Grid Code and any contract, agreement or arrangement between TCN and a User, the provisions of this Grid Code shall prevail unless this Grid Code expressly provides otherwise, provided that in the case of Grid Connection Agreements with Users signed prior to the approval of this Grid Code, the conditions in such agreement shall prevail unless:

(a) the parties agree on amendments to such an agreement: or
(b) the User registers a non-compliance situation that negatively affects the security of the Transmission System, in which case the User must accept the necessary amendments to ensure full compliance with this Grid Code, except for any derogation. (Grid Code 2.7.5). This Grid Code shall be interpreted so as to avoid, to the extent reasonably possible, findings of inconsistency between the Grid Code and the Market Rules: but where there is such an inconsistency and it relates to financial issues, the Market Rules shall prevail and where it relates to engineering issues and/or technical issues this Grid Code shall prevail. (Grid Code 2.7.6).

Photorama
Ministry of Power

Minister of Power Engr. Abubakar D. Aliyu, FNSE, receiving a Plaque of Honour by the Nigeria-India Business Forum for his unwavering support towards improving business and trade partnership between Nigeria and India

Minister of Power Engr. Abubakar D. Aliyu, FNSE, presented with certificate of conferment as Fellow, Solar Energy Society of Nigeria. Award received by the Minister of State for Power Goddy Jedy Agba at the conferment ceremony held in Kaduna during the 40th National Solar Energy Forum.

Engr. Abubakar D. Aliyu, FNSE visited a 5000MW Solar PV project in the desert of Dubai. The minister was accompanied by the MD/CEO, TCN, Engr. Sule Abdulaziz and MD Huawei Technologies.

Minister of Power Engr. Abubakar D. Aliyu, FNSE officially inaugurating the upgrade of Nigeria Sustainable Energy for All (Nigeria SE4ALL) platform version 3.0,

Photorama

Visit of the AFD task team from Paris to the MD/CEO-TCN Engr Abdulaziz Sule

Chairman of WAPP Executive Board Engr. Dr. Sule Abdulaziz with heads of Utilities after the 17th Session of the WAPP General Assembly held in Darkar, Senegal

GMT Port Harcourt Region representing MD/CEO TCN at the Power Summit 2022, with the theme: "Exploiting Business Opportunities in the Power Industry", organized by the Port Harcourt Chamber of Commerce, Industry, Mines and Agriculture (PHCCIMA) on 11th to 12th of August, 2022.

TCN held a five-day SCADA training for its System Operators at the NCC Auditorium, to further acquaint them with the operation and maintenance of the SCADA System.

Voulez-vous apprendre le français?

Do You Want to learn French?

FRENCH	ENGLISH
Ministère de l'Énergie	-Minister of Power
Secrétaire permanent de l'énergie	-Permanent Secretary of Power
Conseil D'administration	-Board of Directors
Président-directeur general	-MD/Chief Executive Officer
Directeur general	-General Manager
Directeur régional de la transmission	-Regional Transmission Manager
Directeur des opérations regionals	-Regional Operations Manager
La direction:	-Management
Un employeur:	-Employer
Les employés:	-Employees
Le chef:	-Boss
Le personnel:	-Staff
Membre du corps de la NYSC	-NYSC Members
Un(e) stagiaire:	-Intern
Un apprenti:	-Apprentice

Sober Musings

No matter how long it lives, the Greatest Lion will eventually die miserably. At their peak, they rule, chase other animals, catch, devour, gulp and leave their crumbs for hyenas. But age comes fast and when this does, the old Lion can't hunt, can't kill or defend itself. It roams and roars until it runs out of luck and is cornered by the hyenas, and is nibbled at and eaten alive, they won't even let the lion die before it is dismembered.

Life is short. Power is Ephemeral. Physical beauty is Short-Lived, you can see it in lions, you have seen it in old people. Everyone who lives long enough will become weak and very vulnerable at some point. Therefore, let us be humble, help the sick, the weak, the vulnerable, and most importantly never forget that we will leave the stage one day.

Some decisions we make on this life's journey are very selfish, others very uninformed and some out of spite or just to intentionally make others suffer. As you dominate and create relevance for yourself, beware and exercise a bit of caution for sometimes some of them may just have very grave consequences.

Pause a little... wisdom is profitable in all things so that your decision does not turn out to be the hook that catches your jaw !

Culled from the net

FOCUS ON

Bauchi Region

Bauchi Regional Office

Coverage Area

The Bauchi Region of Transmission Company of Nigeria (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. Based on TCN's in-house report, a total amount of over 1,589,805.2MWH of electricity was dispatched by the Region to the coverage areas in 2021.

The Bauchi Region comprises the Regional Office of Jos, Gombe, and Yola sub-regions as well as Maiduguri and Jalingo work centers. The Region has 8No (eight) 330/132kV transformers, 19No (Nineteen) 132/33kV substations, and a total of 29No (twenty-nine) 132/33kV transformers. It interfaces with three distribution companies (DisCos) namely, Jos Electricity Distribution Company (JEDC), Kaduna Electricity Distribution Company (KEDC), and Yola Electricity Distribution Company (YEDCO).

Staff Strength

Bauchi Region has a total staff strength of 323, with Engr. Ganiyu O. Aliyu as the Regional Transmission Manager (RTM) and Tech. Muhammad Nasir Umar as the Regional Operation Manager (ROM).

Projects

The Bauchi Region has many completed, ongoing, and proposed projects. Some of the recently completed projects include; the installation of 330/132/33kV, 150MVA T1A transformer in Jos, construction of 1x60MVA 132/33kV transformer with three 33kV outgoing feeders in Bauchi Substation, and replacement of faulty 45MVA with 60MVA 132/33kV power transformer at Gombe Substation.

Others include the commissioning of 1x75MVAr Reactor at Jos Substation; construction of a dedicated Nigerian Army

University (Biu, Borno State) 33kV line bay extension at Biu; construction of a dedicated Federal University Kashere (Gombe State) 33kV line bay extension at Gombe Substation; and construction of a dedicated Doma 33kV line bay extension at Gombe Substation.

TCN engineers in Bauchi Region have successfully executed substation projects such as the installation of the 2x60MVA 132/33kV in Kafanchan, which is at about 70 percent completion.

Other ongoing and proposed projects within the Region include:

COMPLETED PROJECT	
Location	Projects
Gombe Transmission Substation	Installation of 2x50MVAr C.Bs for unbanking
	Replacement of old faulty 45MVA Transformer with 60MVA, 132/33kV Transformer
Jos Transmission Substation	Completed installation of 1x150MVA, 330/132/33kV new Transformer at Jos T.S (awaiting commissioning)
	Installation of 1x75MVAr Reactor with sergi protection
Bauchi Transmission Substation	Installation of 1x60MVA,12/33kV Transformer with 3No 33kV outgoing feeders
Maiduguri Works Center	Completed Re -erection of 10No 330kV Towers along 330kV Damaturu -Molai (Maiduguri) Transmission line (stringing of conductor ongoing)

WORLD BANK ONGOING PROJECT	
Location	Projects
Yola Transmission Substation	Reinforcement with 1x150MVA, 330/132kV and 2x100MVA, 132/33kV power Transformers, High Voltage Switchgears, and Associated equipment with 3 No Additional feeder bays
	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 in Jalingo
	Reinforcement with 1 Nos. 150MVA, 330/132kV power Transformers, High Voltage Switchgears and Associated Equipment with 3 No Additional feeder bays in Mayo Belwa
Damaturu Transmission Substation	Reinforcement with 1 Nos. 150MVA, 330/132kV power Transformers, high voltage switchgears and associated equipment with 3 No additional feeder bays
Bauchi Transmission Substation	Reinforcement with 1Nos. 150MVA 330/132kV power Transformers, high voltage switchgears and associated equipment with 3 No additional feeder bays, upgrading of 22.5MVA and 30MVA Transformer to 2x60MVA 132/33kV Transformers and rehabilitation of control room with digital control system and associated high voltage switchgears
Gombe Transmission Substation	Reinforcement of 1x60MVA, 132/33kV power Transformers, high vol tage switchgears, associated equipment and complete rehabilitation of substation in Biu
	Reinforcement with 1x300MVA, 330/132kv and 1x100MVA, 132/33kV Transformers with high voltage switchgears and associated equipment bus with 3 No additional feeder bays
	Turn in and out with 2x60MVA,132/33kV substation at Biliri
Maiduguri Works Center	Reinforcement of 20x60MVA, 132/33kV power Transformers, high voltage switchgears, associated equipment and complete rehabilitation of substation in Damboa.
	Reinforcement with 1 Nos. 150MVA 330/132kV power Transformers, high voltage switchgears and associated equipment with 3 No additional feeder bays in Maiduguri
Jos Transmission Substation	Reinforcement of 1x300MVA, 330/132/33kV and 1x100MVA power Transformers, 330kV high voltage switchgears and associated equipment. Rehabilitation of civil structures of the control room and digital control system

FG BUDGET PROJECTS (ONGOING)	
Location	Projects
Yola Transmission Substation	132kV DC Yola-Song-Little Gombi-Hong-Gulak-Mubi Transmission line
	2x60MVA,132/33kV substation at Song plus line bay extension
	2x60MVA,132/33kV substation at Little Gombi plus line bay extension
	2x60MVA,132/33kV substation at Hong plus line bay extension
	2x60MVA,132/33kV substation at Gulak plus line bay extension
	2x60MVA,132/33kV substation at Mubi plus line bay extension
	132kV DC line bays extension at Yola
Damaturu Transmission Substation	132kV Damaturu -Gashua-NgurHadejia Transmission lines with substations and line bays extension at Gashua and Nguru.

TCN IGR PROPOSED PROJECT	
Location	Projects
Damaturu Transmission Substation	1x60MVA, 132/33kV Transformer at Damaturu substation with 3 No 33kV outgoing feeders

TCN-DISCO SLA PROPOSED PROJECTS	
Location	Projects
Jos Transmission Substation	Completion of 132kV Makeri-Pankshin Transmission line Reinforcement with 1x100MVA, 132/33kV Transformer at Jos T.S
Gombe Transmission Substation	Reinforcement with 1x100MVA, 132/33kV Transformer Reinforcement with 2X60MVA, 132/33kV Transformer at Potiskum
Yola Transmission Substation	Reinforcement with 1X100MVA, 132/33kV Transformer at Yola T.S

TCN-DISCO PRESIDENTIAL POWER INITIATIVE PROPOSED PROJECT	
Location	Projects
Bauchi Transmission Substation	1X60MVA, 132/33kV Mobile Transformer for New Toro substation
Gombe Transmission Substation	1x60MVA,132/33kV Transformer for reinforcement at Potiskum T.S
Yola Transmission Substation	1x60MVA,132/33kV Mobile Transformer Reinforcement at Savannah T.S

Challenges

The Bauchi Region which covers the entire North-East states of the country is plagued by several challenges that often hamper its efficient operations and optimum performance, especially insecurity which exposes TCN engineers to great risk. Another challenge is the rampant incidence of vandalization of TCN facilities in the Region, causing power outage in the affected communities. In other incidents, TCN projects execution has suffered significant delays due to communal clashes.

Vandalism

There have also been several cases of vandalism on the transmission lines, causing power outage in affected communities. Recent cases of vandalization occurred on Transmission Towers T741, T742, T743, T744 and T745 at Mayo-Belwa on 24 May 2022. The vandals were, however, apprehended and are been prosecuted.

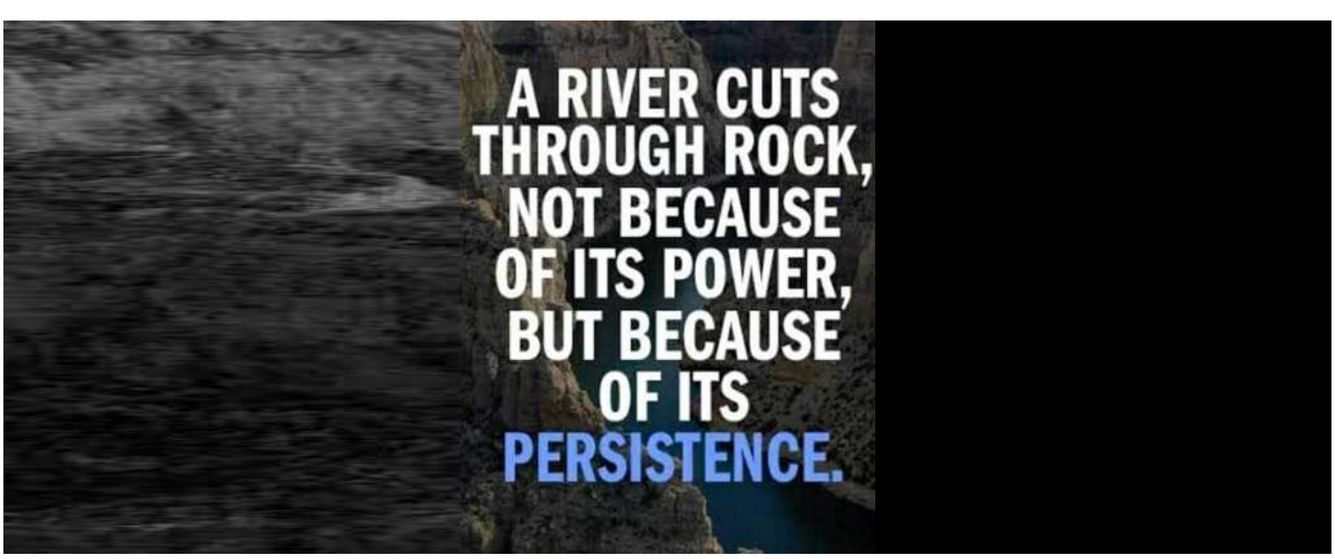
Tower T431 along Gombe-Bauchi line was similarly vandalized on 18 April 2022 and Makeri-Pakshin line on 18 May 2021. Other areas in the Region with rampant cases of vandalization of TCN infrastructure are Maiduguri, Bambam, and many other communities in that axis. In order to address the menace, the Region often organizes sensitization campaigns against vandalism of TCN's infrastructure in its coverage area.

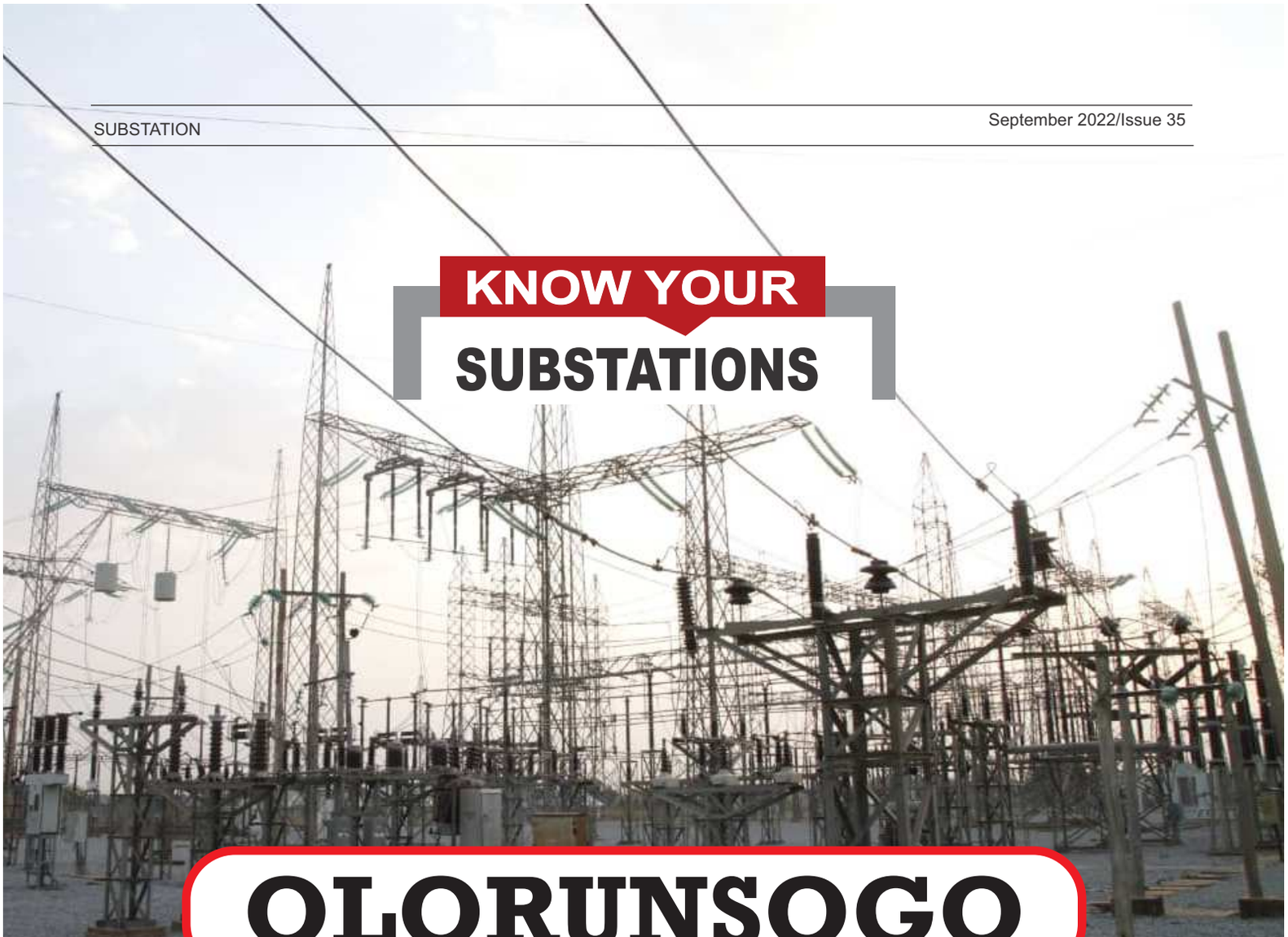
Encroachment

The Region is also faced with the challenge of encroachment on transmission lines Right of Way (RoW), despite the enlightenment of community leaders and residents on the dangers of living or doing business under transmission lines. Most culprits who engage in wanton encroachment and other violations of transmission lines Right of Way often claim they have not been compensated by the government.

Engr. Ganiyu O. Aliyu, RTM, Bauchi Region

Engr. Muhammad Nasir Umar, ROM, Bauchi





KNOW YOUR
SUBSTATIONS

OLORUNSOGO

330/132/33kV
PHASE 1 TRANSMISSION SUBSTATION

Olorunsogo 330kV Substation was built by SEPCO Electrical Power Construction Corporation. The substation was commissioned in the year 2007 by former President Olusegun Obasanjo with a total installed capacity of 334.4MW comprising of 8x41.8MW Generators and 4x105MW Step Up Power Transformers of 10.5/330kV.

The Substation is located at Olorunsogo village along Shagamu/Papalanto express road in Ewekoro Local Government Area of Ogun State. It occupies a land mass of 13.97 acres.

The Substation is fed from Ikeja-West 330kV and Aiyede 330kV Transmission Stations. It also delivers bulk electricity to the same Stations.

The Olorunsogo Substation was commissioned alongside two (2no) 330kV transmission lines, Olorunsogo/Ikeja-west 330kV (circuit R1W) with a total length of 45.45km and Olorunsogo/Ayede 330kV line circuit R2A (118.35km).

The two lines are for importing and exporting electrical power into the Grid System. The transmission substation could import power from Ikeja-West 330kV substation to Ayede 330kV substation and vice versa. The Station exports generated electrical power from Phase 1 to both stations respectively.

Olorunsogo 330kV Phase 1 Substation has 2No. 330kV Bus Bar with 12No. 330kV Circuit Breakers and 28No. 330kV Isolators.

Project plans are under way to feed Ejigbo 330kV Hub Station from Olorunsogo Phase 2 330kV Substation while wheeling of generated Power from Olorunsogo 330kV Phase 1 Substation is managed by Papalanto Sub-Region under Lagos Region.

Voltage Stability of the Power System using Genetic Algorithm: A Review

Bemdoo Saka, Abiodun Musa Aibinu, Yekini Suberu Mohammed, Damilare Emmanuel Olatunji

Continued from last edition

The application of the genetic algorithm to the load flow problem in electrical power systems. The variables of the load flow were coded to a finite string with the objective function mapped to a fitness form presented. The load flow objective function to be minimized was transformed and normalized to a fitness scheme to be maximized. A population size of 100, probability crossover of 0.9, and probability mutation value of 0.01 were used as the genetic parameters to run the load flow for a 3-bus test system while a population size of 200, probability crossover of 0.9, and probability mutation value of 0.01 were used as the genetic parameters to run the load flow for a 6-bus test system. A penalty term was incorporated based on system losses into the GA's fitness scheme.

A novel approach for optimal placement of multi-type FACTS devices based on a Genetic Algorithm (GA) was researched. In the proposed genetic algorithm, a tournament size of 4 was selected. This method chooses each parent tournament size randomly and also the best individual out of that set to be a parent. In this paper, the mutation was achieved by adding a random vector from a Gaussian distribution to the parents. The chromosome structure for this algorithm contains both the rating and location of FACTS devices. The tournament size of 4 used for this network meant the best individual was selected from the old population to the new population. The goal of the optimization algorithm was achieved by placing FACTS devices to enhance the voltage stability margin of the power system considering cost function. The best voltage profile was achieved by the installation of multi-type FACTS devices.

A modified Integer Genetic Algorithm (IGA) was applied to the full reactive power compensation planning. The algorithm solved both the siting and operational problems under contingency conditions was recommended. In this work, a number of important extensions to the simple genetic algorithm (SGA) were used to improve the GA. An Integer Genetic Algorithm (IGA) used integers to represent candidate solutions instead of binary digits. The settings used for the IGA are a population size of 200 with a 100% probability of crossover and reproduction and a mutation rate of 0.008. Tournament selection was used and the result was best found over a 500-generation trial. The algorithm using the multi-objective formulation of the reactive power problem was shown to find desirable solutions that provided well-conditioned power systems while still incurring a low cost.

An evolutionary technique to seek the optimal location of FACTS devices in the power system was presented. The main objective was to find the optimal location of SVC in the network using a genetic algorithm (GA). The configuration of the SVC was defined by the location and rated value. An individual was represented with two strings with the first one corresponding to the location of the SVC while the second string represented the value of the SVC. The proposed methodology used Newton Raphson iteration for the power flow analysis while GA was used for an optimization problem. For implementing the GA, the population size of 100 was taken and the maximum number of generations was taken as 100. The proposed method was tested on the IEEE 14-bus system. The proposed methodology gave the rate of the SVC (in MVAR) at the buses they were placed.

In a paper presentation, a genetic algorithm was used to solve the optimization problem associated with optimally placing distributed generation in a power system to guarantee the voltage profile and maximize loadability conditions in normal and contingency cases. Value encoding of chromosomes was used where the placement problem was modeled by using real numbers. Selection, crossover, and mutation were applied to the population to create a new population. The genetic algorithm was tested on an IEEE 34- bus distribution network and it reached the global optimal solution for the allocation of several distributed generation units. The GA-based method was used to improve the security of the system under a single N-1 contingency. The result of the proposed genetic algorithm method shows that the optimum allocation of DG units with reactive power capability in power networks can enhance voltage stability and maximize voltage stability margin in the network. With the addition of DG in this method, the maximum loading of the system for operational voltage limit increased to 74%.

A new approach based on genetic algorithms to find multiple load flow solutions were also presented. The proposed method provides an exploratory way to discover the structure of the load flow function and thus opens a new avenue to solve multiple solution problems. To implement the genetic algorithm in the load flow problem, each voltage component was binary coded as a certain length sub string over a specified interval. These strings were joined to form a long string of length 41. A population size of 100, probability crossover of 0.9, and mutation of 0.01 were used as the genetic parameters. The proposed algorithm was applied to a 5-bus and 7-bus system. In the paper, the Newton-Raphson method was applied by using GA's results as initial starting values. The proposed GA method provided an explanatory way to discover the structure of the load flow function and thus opened a new avenue to solve multiple solution problems.

A hybrid intelligent approach involving a Genetic Algorithm and Artificial Neural Network for voltage stability margin estimation was used. In the Genetic Algorithm-based back propagation

neural network method (GABPNN), the genetic algorithm performed the weight adaptation for acquiring the minimized error during the training. Genes encoding is required to represent weights. Each weight was encoded as a fixed 5-digit string representing weights in the range. After deciding the encoding scheme and generating an initial population of chromosomes, the program for GABPNN was implemented. The fitness function was taken as the inverse of the root mean square (RMS) error function. During training, it was found that the number of hidden layers affected the convergence rate. The algorithm was effective because it combined the capacity of the genetic algorithm in avoiding local minima and at the same time fast execution of the back propagation algorithm.

Similarly, a standard test system to simulate the reactive power optimization, and compared the optimization results of the simple genetic algorithm and the improved genetic algorithm was also used. In the research, an applied GA reactive power optimization of power system using the MATLAB platform on IEEE 14, 30, 57-bus system with bus voltage ranges of 0.95 ~ 1.1 (per-unit value) benchmark systems were carried out. The manifested data showed that the optimal value of the IEEE 14 system by the improved genetic algorithm (IGA) is 0.126935, and the reduction ratio is 8.35%, better than the SGA result, 0.129240. The reduction ratio of IEEE 30 and IEEE57 are 11.44% and 17.43%, respectively, proving that the optimization performance effect is notable. Also, the improved GA can more efficiently return smaller optima than the SGA. The comparison indicates that the proposed IGA is feasible and effective in solving the RPO problems and the IGA has lower active network loss and better global convergence performance and convergence speed.

As a result, choosing the best location for the scattered generation unit and the capacitance bank with the purpose of maximizing a target function, such as losses, voltage profile improvement, and the cost of investment in capacitors and dispersed production should be a priority. Considering the use of IEEE standard 33 buses for simulation, using genetic and harmonic search algorithm, the simulation result show that after applying the two algorithms, losses from the original arrangement were significantly reduced by 31.82%, and the 33- bus network active casualties showed that the presence of these resources in the same initial arrangement has reduced losses from 202.5 kV to 169.75 kV. The genetic algorithm was very suitable for solving this problem due to its easy compatibility with discrete variables and having an operator to escape local optimizations.

Genetic algorithm (GA) based optimization to improve the voltage stability of a power network using Distributed Generation (DG) Units was applied. The GA also influences the best places of DG Units in the power network, the number, and also the sizes of DGs. Firstly, the problem was attempted without using GA. As a result of that, just one DG with constant size was considered but in order to easily find the best places for DGs placement, GA was used to solve the problem because finding the best places for DGs could be very complicated and time-consuming, considering the number and size of DGs. To evaluate and compare the voltage stability of the power network solutions, an index called Voltage Index (VI) was proposed. A Forward/Backward load flow was used to determine the bus voltages, and consequently the VI of the networks. The results show that by using DGs, the voltage stability of the network was improved. In addition, GA, as an optimization algorithm, can find the best solution for the problem by considering the number, size, and place of DGs after a specific number of iterations.

Investigated and presented suggested methods for improving the voltage profile of in delta Egypt network to ensure voltage stability using optimum reactive power compensators (capacitor bank) was implemented. Four different scenarios were performed to achieve the best voltage profile in the delta Egypt network. Out of all the scenarios, the scenario performed using a GA technique to define the optimum location and size of a reactive power compensator device extremely enhanced the system with the least voltage drop (2.1%), power losses of 122.3 MW with high active power reserve (26.6%). The findings showed that this method is the most effective of all; as a result, the system is more stable, reliable, and efficient. (DIgSILENT power factory software) and (MATLAB –software) are used to simulate and calculate the electrical network in order to examine the voltage profile.

There was a comparison and presentation of a hybrid Artificial Neural Network and Genetic Algorithm (ANN-GA) solution for online monitoring of long-term voltage instability (20 load buses, 10 generator buses, and 35 transmission lines) on the New England 39-bus test system. The voltage magnitude and phase angle received from phasor measuring units (PMUs) are used as input vectors, with the Voltage Stability Margin Index (VSMI) vector as the output vector. The results suggest that the proposed technique for predicting the VSMI may be employed for online voltage stability monitoring in real-world systems and that the ANN-GA model outperforms the ANN model. The result shows that selecting an ANN meta-parameter using a genetic algorithm reduces computational complexity when compared with the ANN model.

CONCLUSION

In voltage instability conditions, the most common phenomenon is a decline in the bus voltages, and as a result voltage drop and, in extreme cases, a blackout do occur. The efficiency of GA-based approaches from the reviewed publications indicated that the genetic algorithm is a great methodology for handling the voltage problem while also lowering losses and doing so in a shorter amount of time on different IEEE n-bus systems. The genetic algorithm-based strategy is a good optimization method in terms of improving voltage stability, and load shed while maintaining transient stability requirements. In terms of enhancing voltage stability and shed load while preserving transient stability criteria, the genetic algorithm-based strategy is a good optimization method. Also because of its effectiveness in addressing the difficult integer variable problem with acceptable calculation time, a Genetic Algorithm-based system is suitable for Transmission Expansion Planning (TEP).

NSCDC Commandant Pays Courtesy Call On TCN-Enugu Region

By Mary Philips-Udom

The Nigerian Security and Civil Defence Corps (NSCDC), has pledged to fully support TCN to curb transmission infrastructure encroachment in Enugu Region.

The Enugu State Commandant of the NSCDC, Mr. Aloysius Obiorah Udemadu, made the pledge when he led a team of officers on a courtesy call to Enugu Regional Office of TCN on Tuesday 30th of August, 2022.

The team was received by the Regional Transmission Manager, (RTM), Engr. Emmanuel Akpa and other Management staff.

In his welcome speech, Engr. Akpa thanked the Commandant and his team for the visit. He noted that the meeting was timely as it coincided with the time that TCN was out to solicit and mobilize support from relevant government agencies such as the NSCDC, to collaboratively address the challenging violations of TCN's Right of Way (RoW), and vandalization of TCN facilities which have militated against the transmission of bulk power in the Nigerian Electricity Supply Industry (NESI).

He appealed to the Commandant to deploy more NSCDC operatives to patrol TCN installations to further ensure the eradication of the culprits within their jurisdiction.

Responding, Commandant Obiorah expressed appreciation for the warm reception accorded his team, and highlighted the mandate of the NSCDC which among others are to ensure national security as well as, protection of crucial national infrastructures like pipeline and TCN installations.

He assured the Management of TCN Enugu Region of his Command's capability and readiness to perform its statutory role whenever required, promising to put in place appropriate measures to protect TCN assets.

The Assistant Commandant (Anti-Vandalism), Mr. A.H Rogo, who also addressed the meeting said that Management of the Region should promptly hand over to NSCDC, any vandal that TCN may apprehend for appropriate action promising to deal with such matters to their logical conclusion. The highpoint of the courtesy visit was the establishment of a formal line of communication between the Region and NSCDC, based on the promise made by the Commandant to be accessible any time the need arises.

Middle; Engr. Emmanuel Akpa RTM. Enugu, and Mr Aloysius Udemadu, Enugu NSCDC Commandant, flanked by other NSCDC officials and some staff of Enugu Region

Enugu Sub-Region Appreciates Staff

By Mary Philips-Udom

Management of Enugu Sub-Region of TCN has organized an award ceremony in appreciation of staff who have distinguished themselves in the performance of their duty as well as contributed positively to the achievements of the Region in recent time.

The event which was the first of its kind with presentation of awards in 12 categories to deserving staff, took place on Friday, 8th June, 2022 at the Sub Regional office in New Haven, Enugu, with the Management team from Enugu Region in attendance.

Group photograph of some staff of Enugu Region and Awardees

Speaking at the occasion, the Assistant General Manager (Transmission), Enugu Sub-Region, Engr. Charles Chidi Iwuamadi noted that the secret of growth in any business was the culture of appreciation which can boost employee confidence in the company's vision and leadership for higher productivity.

Engr. Iwuamdi while thanking staff for their dedication to work said, "I want you to know that all the little things you do every day in your little corner makes a huge difference. Thank you for your dedication and willingness to go the extra mile; the late nights, extra hours, and weekends.

He also appreciated those who have distinguished themselves in the different categories of awards for their hard work and commitment to excellent performance, and advised them to sustain the standard and even surpass it in subsequent assessment exercises.

In his remarks, the Regional Transmission Manager (RTM) Enugu Region, Engr. Emmanuel Akpa thanked Engr. Iwuamadi for coordinating the event and advised staff, especially the awardees to keep up the standard by raising the bar of their performance.

The climax of the occasion was the presentation of awards to the Most Diligent Staff, Engr. Peter Ibeanusi, the Most Outstanding Staff, Mr. Aveh Roland, Most Reliable Staff of the Year, Mrs. Onyebuchi Justina, Most Responsible Staff, Engr Emeka Aneke, Most Punctual Staff, Mrs. Felicia Nwachukwu, Most Effective Staff, Engr Ugwu Samuel and Most Resourceful Staff, Mrs. Uwazurike Veronica. Others are Most Willing Staff, Engr Ezealo Emmanuel, Most Competent Staff, Mrs. Okafor Nkechi, Most Coordinated Staff, Mr. Nwokedi Aghadi, Most Potent Staff, Mr. Anita Chukwuma and Most Active Staff, Mr. Cletus Ezeonyejiekwu.

Responding on behalf of the awardees, Engr Peter Ibeanusi thanked the Management for appreciating them and pledged their total support, unalloyed loyalty, and continued commitment to keep the flag flying in the Sub-Region.

Suspected Vandals Arrested For Vandalizing The 330kV Ugwuaji-Makurdi Line

By Mary Philips-Udom

The incidence of vandalization of transmission lines in the Enugu Region has reached an alarming stage. Many cases have in the past been reported by TCN to appropriate quarters yet the perpetrators have remained undeterred. In recent times, the trend has taken a frightening dimension as the reported cases have been on the increase, prompting the Management of the Region to step up its surveillance and monitoring strategies, in collaboration with local communities.

The efforts have continued to pay off and recently, two young men suspected to be the ones behind vandalism activities in the Region were nabbed by a local vigilante while vandalizing the 330kV Ugwuaji-Makurdi Double Circuit line on 24th of August, 2022.

The suspects, Udoka Ohinya (AKA Onyenso) and Ejike Onuze both from Mgbuji community in Isi Uzo Local Government Area of Enugu State, after investigations, were confirmed to be the vandals responsible for recurring cases of vandalism within the community.

Upon receipt of the information, the Management of Enugu Region promptly dispatched a team of System Lines and Public Affairs officers to the site of vandalism for on-the-spot assessment of the extent of damage wrecked by the vandals.

Speaking on the arrest, a member of the neighborhood watch, Mr. Edeh Uwaezuoke Valentine informed the TCN team that he received a call from the traditional ruler of the community, who requested immediate arrest of the suspects and their gang for vandalizing the transmission lines and towers in the area.

A member of neighborhood watch who participated in the arrest of the culprits, informed TCN team that report of the incident was brought to the attention of the vigilante by the paramount ruler, prompting them to swiftly proceed to the scene where they apprehended the perpetrators in the act.

Oji River- Nsukka 66kv Line vandalized

In the same vein, the Oji River-Nsukka 66kV line was vandalized on Tuesday, 16th August, 2022, and the vandals made away with tower cross arms, insulators and conductors.

The incident which took place at Ukopi in Igbo-Etti Local Government Area of Enugu state, was also checkmated by the combined team of Anti-Vandal Unit from the Nigerian Police Force, Enugu Command, and the Nigerian Security and Civil Defence Corp (NSCDC).

One of the suspected vandals in police custody

Commenting on the development the Divisional Police Officer in the area, Mr Daniel Ogbuaba said the collaboration between the two security agents through local intelligence from the neighborhood security men was instrumental to the arrest of the ugly incident.

The Deputy Commandant, Head of Critical Infrastructure, NSCDC, Mr. Hassan Maidamma and the Assistant Commandant, Mr. Monsuru Shehul Yaba who visited the site alongside TCN team recovered some cables abandoned by the vandals and assured TCN team of constant patrol of the area.

It is gratifying to note that in spite of the incessant vandalization of transmission installations in Enugu Region, the Management of TCN has continued to work hard to ensure bulk power supply in the state. Recently, the New Haven/ Otukpo 132kV Tower 50, in Onyoho Nike Enugu East Local Government Area in Enugu State which was severely vandalized has been successfully reconstructed by one of TCN's contractors.

It would be recalled that the line was vandalized on Feb 8th, 2022. with no arrest made, even as the vandals carted away all the vandalized materials. The reconstruction of the vandalized line started on 8th June, 2022, and has been completed and energized on 23rd June, 2022. The reconstructed line feeds Otukpo and Nsukka through the Enugu Electricity Distribution Company (EEDC).

TCN Marks Structures under Transmission Lines in Enugu State

By Mary Philip Udom

PM (T), Enugu Sub-Region, Engr. Jude Madu, sensitizing residents on dangers of building under TCN's Transmission Lines Right of Way

As a result of the growing incidence of illegal structures under the transmission lines Right of Way (RoW) corridor in Enugu State, staff of the System Lines Department led by the PM (T) Enugu Sub-Region, Engr. Jude Madu conducted a wholesome patrol of transmission lines in Enugu State, to inspect affected lines and intimate culprits on the need to vacate their structures before it is demolished.

The most affected lines routes are New Haven - Ugwuaji 330kV DC lines and New Haven -Onitsha 330kV DC lines. On inspection of the illegal structures, about 15-20 buildings including a school, churches, club house, and residential buildings were marked for demolition by the Safety Officer working with the team.

The team engaged one of the club managers, who promised to convey the development to the owner, while undertaking to immediately cut all overgrown trees touching the transmission lines.

The PM (T) Enugu Sub-Region, Engr. Jude Madu used the opportunity of the inspection exercise to conduct sensitization outreach on the dangers of trespassing on TCN's Right of Way by building under transmission high tension lines which can snap and cause incalculable damage to lives and properties.

He advised violators to remove the marked structures to avoid legal consequences and subsequent demolition of the structures as TCN has engaged the relevant law enforcement agencies to effect demolition of all structures violating the RoW without further warning.

He informed them that there was need to always verify land ownership and availability from appropriate Municipal Authorities before buying them or embarking on erection of structures. He noted that it is important to adhere to the regulatory requirement which leaves a corridor of 50 meters with 25 meters on both sides of a 330kV line, in the case of 132kV line, a minimum of 30 meters, 15 meters to the right and 15 meters to the left. He advised them to always seek clarification from appropriate authorities, before building, to avoid waste of resources.

One of the structures being marked for demolition

The Making and Evolution of an Electricity Market:

Unpacking The Nigerian Electricity Bill

By Ivie Ehanmo

Part 1: State participation in Electricity Value Chain activities in areas covered by the National Grid and Review of National Electricity Policies and Plans.

The Electricity Bill, 2021 which seeks to repeal the Electric Power Sector Reform Act, 2005, was recently the subject of discussion(s) at a two-day public hearing organized by the Senate Committee on Power with industry stakeholders actively present. The Bill is a commendable development, as it seeks to provide a comprehensive legal and institutional framework for the post privatization phase of the power sector, to be governed by a contract and rule-based by a competitive electricity market in Nigeria. The Bill also seeks to attract private sector investments into the entire power value chain, through transformative policy and regulatory measures.

How far does the Bill achieve the intended objective of attracting private sector investment based on its provisions? Will the electricity sector witness a new wave of investments in the Nigerian Electricity Supply Industry (NESI) if the Bill is enacted into law?

This Policy Brief as one of a multi-part series will showcase the viability of the Bill in attracting the much-needed investments into NESI or otherwise, in a bid to educate readers on the process, evolution and dynamics of electricity markets.

In this first part, the key provisions of the Electricity Bill will be highlighted, and the issue of National Electricity Policies and Plans will be expounded alongside the scope for states to participate in value chain activities in areas covered by the national grid.

Notable highlights of the Electricity Bill include:

•Provision of a clear guide and legal basis for a phase-wide development of NESI post-privatisation.

• Provision for the formulation and adoption of a National Integrated Electricity Policy and Implementation Plan to eliminate policy overlaps and duplication of efforts and entrench policy and regulatory harmony.

•Provision of a framework to support the development and utilization of renewable energy sources and to attract investment in renewable energy sources for the purpose of increasing the contribution of renewable energy to the overall energy mix.

• Provision of a framework for improved off-grid electrification through renewable off-grid and mini-grid solutions.

• Provision of a framework for the building of indigenous capacity in technology for renewable energy sources.

• Clarification of the constitutional role of States and Local Governments in electricity generation, transmission, and distribution vis-à-vis the role of the Federal Government in rural electrification.

• Provision for the supervisory power of the Minister of Power and attendant functions.

• Provision for oversight responsibility of the Nigerian Electricity Supply Industry by the National Assembly.

• Establishment of the Rural Electrification and Renewable Energy Agency to take on the dual function of rural electrification and renewable energy development in the country.

• Provision for electricity supply as a licensed activity in NESI.

• Provision of Renewable Purchase Obligations and Feed-in-Tariffs to promote consumption of energy produced from renewable energy sources.

• Provision for Net-Metering.

• Provision for Incentives and Standards for renewable sourced electricity.

• Provision for the integration of renewable energy into the grid and grant of Third-Party Access to renewable energy generators.

• Provision for private sector investment in the transmission network.

• Recognition of eligible customers in the various market stages.

• Provision for the incorporation and licensing of the Independent System Operator.

• Establishment of the Hydroelectric Power Producing Areas Development Commission.

• Provision for Supply and Electricity Distribution Franchising subject to tariff regulation.

• Provision for electricity subsidy by the Federal or State Governments.

• Provision restricting the abuse of market power within the framework of the Federal Competition and Consumer

Protection Act, 2019.
•Provisions recognising the Nigerian Electricity Management Services Agency.
•Provision of a clear framework for cross-border electricity trading in the interest of national security and energy self-sufficiency.
• Provision of a framework for electricity theft and other measures necessary for the security of electricity infrastructure.
•Provision for the quick and speedy resolution of disputes via the establishment of the Electricity Disputes Appeal Tribunal.
•Increased scope and charges for offences and penalties.
•Establishment of the Federal Power Task Force, etc.

Applicability of the Electricity Bill 2021- Expanding the scope for State participation in Value Chain activities in areas covered by the National Grid and review of National Electricity Policies.

Based on the provision of Section 2(2)(a) of the Bill, the applicability of the Bill in line with the provisions of Section 4 and Paragraph 13 and 14, Part II, Second Schedule to the Constitution does not invalidate any laws passed by the House of Assembly of a State with respect to generation, transmission, and distribution of electricity to areas not covered by a national grid system within that State. However, the limitations of grid coverage based on the powers of the State to generate, transmit and distribute power has recently been somewhat laid to rest, based on the recent passage of the Constitutional Amendment Bill seeking to amend relevant provisions of the Constitution to allow states generate, transmit and distribute electricity to areas covered by the national grid.

The successful Presidential assent of the Constitutional Amendment Bill into law (if achieved) will override the provision of Section 2(2)(a) of the Electricity Bill that seeks to restrict/ limit States to participate in value chain activities, in so far as those activities are outside the purview of the national grid, essentially restricting states to off-grid activities. By extension, this will also apply to the provisions in Sections 2(2)(b),(c)and 2(3) dealing with the establishment of state electricity power stations, establishment of State Electricity Boards or other authorities to manage electric power stations in areas not covered by the national grid and also the sanctioning of joint collaboration between the Federal and State Governments, and the organized private sector to facilitate electrification of areas not covered by a national grid system, particularly through the exploitation of renewable energy sources. Section 2(3) defines power stations as the assembling of any plant or equipment set up by any State Government to generate electricity to areas not covered by a national grid system within the State.

There are however possible concerns that may emanate based on the expanded scope of participation by States in areas covered by the national grid, ranging from demarcating areas of operation(s), multiplicity of licensing framework(s), duplicity of regulatory and institutional structures, contract renegotiations (particularly industry and transaction documents that formed the basis of the privatisation of the sector), harmonizing the regulatory powers of the Nigerian Electricity Regulatory Commission (NERC) and the State established electricity regulatory authorities to avoid excessive regulatory hurdles for operators or what is popularly termed as 'over regulation', etc.

With States getting involved in the full spectrum of value chain activities including electricity distribution, a well-designed market structure will need to be mapped out, the starting point being an effective National Integrated Electricity Policy and Implementation Plan factoring involvement by the States within the value chain dynamics, to build an efficient energy system that addresses security, environment, economic efficiency, and safety within the nation's energy resource mix.

Although the Bill in Section 3(1) requires the Federal Government through the Ministry in charge of Power to develop and publish in the Federal Gazette, an Integrated National Integrated Electricity Policy and Strategy Implementation Plan in consultation with relevant 'Government Authorities' and other stakeholders; which can be inferred by general definition to include State Governments, to avoid any form of ambiguity, the definition of 'Government Authorities' should be categorically defined to include State Governments and attendant State Ministries, Departments and Agencies (where applicable).

A cooperative and harmonised approach will allow for the speedy attainment of improved energy access across States and by extension, the entire economy. This is hinged on the objectives of national electricity policies and plans that provide a roadmap of the future energy landscape in a given country, which will in effect guide short and long term infrastructure investments and policy development, while addressing energy demand requirements, particularly the energy needs of vulnerable households often pegged as 'lifeline' consumers. Energy plans also analyse current energy consumption trends within different sectors of the economy, and the results of such trends are usually used to forecast/project future energy requirements under different scenarios.

In India, the National Electricity Policy recognised in the

Electricity Act of 2003, requires the Central Government to formulate the Policy in consultation with the Central Electricity Authority (CEA) and State Governments. Section 3(1) of the Electricity Act 2003 provides:

"The Central Government shall, from time to time, prepare the National Electricity Policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy."

The National Electricity Policy in India has evolved in consultation with and considering the views of the State Governments, Central Electricity Authority (CEA), Central Electricity Regulatory Commission (CERC) and other stakeholders. The National Electricity Plan envisaged in Section 3 (4) of the Indian Electricity Act 2003, stems from the National Electricity Policy as enshrined within the Electricity Act 2003.

The proposed National Integrated Electricity Policy and Implementation Plan in addition to the areas listed in Section 3(2) of the Electricity Bill, should also address key areas such as: Generation, Transmission, Distribution, Cost recovery, Financing power sector programmes including Private Sector Participation, Energy Conservation, Environmental issues, Cogeneration and Non-Conventional Energy Sources, Protection of Consumer Interests and Quality Standards, Competition, Technology Development and Research and Development, etc.

The Electricity Policy of a nation is key, as it sets the tone of how the sector will function and it also dictates the framework of any attendant integrated resource plan(s). This has however not been the case in South Africa, where although a 1998 White Paper on Energy Policy exists, the planning that has taken place over time has recently been criticised as being done in the absence of a published National Integrated Energy Plan which is a requirement enshrined in Section 6 (1) of the National Energy Act, Act 34, 2008, stipulating that the Minister of Energy should develop, review, and publish annually an Integrated Energy Plan. There is however a published integrated resource plan for electricity covering the period from 2010 to 2030, as published in 2011.

Efforts in developing a National Integrated Electricity Policy and Implementation Plan in Nigeria cannot be undertaken effectively without the involvement of the States considering the individual sectoral activities that take place in the States within the wider sub-sectors of the national economy. A cooperative approach will result in effective short- and long-term demand forecast, identification of locations for capacity additions, adequate integration of possible identified locations with the transmission system, efficient deployment of technologies available to undertake value chain activities, fuel choice allocation based on energy security and environmental considerations. Furthermore, any attempt to isolate key stakeholders in the process will only result in intermittent, uncoordinated, and incoherent integrated resource planning.

Key Takeaways

- A well-designed market structure will need to be mapped out and developed to accommodate the involvement of States.
- The National Electricity Policy and Strategic Implementation Plan should categorically factor and define State involvement, to build an efficient energy system.
- An Integrated Energy Plan is key for adequate resource planning via trend forecasting, scenario analysis, etc.
- A cooperative and harmonised approach to developing Energy Policies and Plans will allow for the speedy attainment of improved energy access across States and by and large the entire economy.

TCN Holds 2-Day Workshop For Staff on the Use of Thermovision Camera

By Yusuf Inuwa

In finding ways of further improving national grid operations, the Transmission Company of Nigeria (TCN) held a 2-Day Workshop for its Lines Department staff on the use of Thermovision Camera to limit power loss across its stations.

The workshop was held from 20th to 21st of September 2022, in the newly completed office building for the Region.

During the lecture, workers in the Lines Department were instructed on the importance of deploying the Thermovision Camera on its equipment to detect "hotspots". They also learned that hotspots which usually occur as a result of leakage, brought about power loss that invariably affects revenue inflow, but that with the Thermovision Camera, internal and external faults on electrical equipment could easily be detected.

The program facilitator and Manager of Lines Department, Kano Sub-region, Engr. Isa Muhammad Alhaji, explained that, "Thermovision Camera detects temperature by recognizing and capturing different levels of infrared light which is invisible to the naked eye but can be felt as heat if the intensity is high enough."

Speaking on behalf of the Workshop participants, Engr. Kabir Y. Hamza, Assistant Manager Lines, Kano Sub-region, explained that "When the conductor that supplies energy generates heat above 50*C, it will lead to leakage and energy loss and that in some cases this may cause the breakdown of power equipment. The loss of equipment and energy results to huge loss of revenue for TCN. Thermovision Camera enables one to detect heat generated by the power equipment and report to the Control Room for prompt maintenance intervention."

The essence of the training was to teach staff of the Lines Department the practical use of the Thermovision Camera in the field to detect problems in equipment, particularly in Clamps and Conductors to strengthen TCN's ability to detect and remedy faults in order to reduce downtime, avoid loss of equipment and consequently revenue.

RTM, Kano, Engr. Bashir Gote, addressing staff at workshop.

Program facilitator and Manager of Lines Department, Kano Sub-region, Engr. Isa Muhammad Alhaji, giving a lecture during the workshop

Field practice

POTPURRI

MD/CEO, TCN, Engr. Dr. Sule Ahmed Abdulaziz presented with an award for outstanding performance leadership by Centre for Good Governance in Africa

Mr. Bili Kazah Akau, Principal Manager, (Public Affairs), on his conferment as Fellow of the Nigerian Institute of Public Relations (FNIPR)

Hajia Zafira M. Nagoro, Assistant Manager, (HR), TSP, presented with a Certificate of Credence by National Union of Kebbi State Students (NUKESS)

TCN Kano Region hosts friendly Football Match with FC Hara (Katsina Subregion)

By Yusuf Inuwa

Group picture from both team

To further establish a more cordial relationship amongst staff, the Kano Regional Office of the Transmission Company of Nigeria, held a friendly match with FC Hara of Katsina Subregion on 15th September, 2022.

The match which took place at Kumbotso kicked off at 5:00pm with both teams displaying great professionalism. FC Hara took the lead in the 38th minute but later received an equalizer in the last minute by TCN Kano Region.

Speaking after the match, the Assistant General Manager (Transmission), Kano Region, Engr. Ibrahim Aliyu, applauded the players of both teams for their outstanding performance and promised that TCN will continue to harness ways of strengthening the relationship amongst staff in the newly created regions.

The **Man of the Match Award** was presented to Shamsudeen Bala Musa (TCN staff) by the Region's Management team. The football match attracted a large turnout of supporters from both teams and the general public.

TCN Begins Work on New Substations in Kaduna

By Zakiyya Ibrahim & By Zara Babagana

As TCN continues to upscale its wheeling capacity and improve delivery of bulk power to Kaduna State, The Transmission Company of Nigeria (TCN) has embarked on the construction of two new substations in Jaja, Hunkuyi in Kudan Local Government Area and Jaji Igabi Local Government Area of Kaduna State.

The Jaja project which is a 2x150MVA 330/132/33kV substation, commenced on 9th May, 2022, to be connected to the 330kV Kano Transmission line, while the Jaji substation, a 2x60MVA 132/33kV project, commenced on 25th August, 2022 with the building of a perimeter fence to secure the land. It is to be connected to the 132kV Zaria Transmission line.

TCN Management team, led by the Regional Transmission Manager (RTM), Engr. Aminu Haruna, visited the Emir of Zazzau, His Royal Highness Alhaji Nuhu Bamalli in his palace to intimate him of the proposed substations in Jaja and Jaji which are within his domain. He briefed the Emir on the progress of work thus far and expressed profound appreciation to the Kudan Local Government Chairman and the people of Jaja community for their co-operation.

The Emir assured TCN of the Emirate's maximum support and assistance to ensure the successful completion of the projects and urged the team to provide him with regular updates on the projects.

The Assistant General Manager (Civil projects), from TCN Corporate Headquarters, Engr. Mahmud Abdullahi, who spoke on the impact of the projects to the host communities and environs, reiterated the readiness of TCN to pay appropriate compensation to the affected persons whose land was being used for the projects in accordance with the Federal Government-approved guidelines and procedures. He further disclosed that the names of the Project Affected Persons (PAPs) have been compiled for appropriate action.

He added that supply and installation of the new sub-stations equipment will be carried out by Engineering Procurement and Construction (EPC) contractors under the African Development Bank (AFDB) and will be funded through TCN's project implementing unit (AFDB-PIU).

On completion, the Jaja and Jiji Substation projects will boost TCN's wheeling capacity by 240MW and 96MW respectively.

Similarly, work has commenced on a new mobile substation project in Mahuta area of Kaduna Metropolis. The project is a brand new 60MVA 132/33kV Mobitra substation which commenced on 10th September, 2022, with the erection of a perimeter fence to secure the premises.

The project is part of sustained effort by the Federal Government of Nigeria Power Company (FGNPC) and Presidential Power Initiative (PPI), to build more power stations to improve the nations grid capacity.

The Mahuta area has been earmarked by the Kaduna State Government for the building of a Federal Medical Centre which expectedly, would require a large quantum of power supply; a new sub-station in the area would therefore alleviate the burden of over loading of transformers, load shedding and also drastically reduce power cuts.

The initiative is in pursuance of the objectives of TCN's flagship strategy expounded in the Nigerian Electricity Grid Maintenance, Expansion and Rehabilitation Programme (NEGMERP), under which the Federal Government of Nigeria Power Company (FGN Power) is to deploy one quarter of its power equipment procured to TCN, to enhance the upgrade and expansion of its network.

On completion, the 60MVA 132/33kV transmission substation will add 48MW to the national grid and also transmit additional bulk electricity to Kaduna Electricity Distribution Company (KAEDCO) in particular. It would reduce technical losses for the distribution company, as long distribution lines would not be necessary due to closeness of the new transmission substation.

The substation's project which include offices and accommodation for operations staff will positively impact power voltage and stability in the area, leading to significant boost in business activities in the area.

ACCOMPLISHMENTS

HIGHLIGHTS OF SOME ACCOMPLISHMENTS JULY - SEPTEMBER 2022

- Installation and Commissioning of 3No. Current Transformers on T21 secondary bay at Effurun 132kV Transmission Substation
- Installation and Commissioning of T6 81MVA 11.5/132kVTransformer 132kV Circuit Breaker at Delta TS
- Replacement of vandalized tower members along Oji -New Haven 132kV line on tower T5
- Replacement of vandalized tower members along Oji -New Haven 132kV line on tower T5
- Replacement of vandalized tower members along Oji -New Haven 132kV line on tower T4
- Replacement of Nkalagu - Abakaliki 132kV YØ line trap at Nkalagu Transmission Substation and 132kV Line at Otukpo Transmission Substation
- Wiring of the New Relays, New Mounted Pri. CB and other Terminations in the Control and Protection Panel, DC and AC checks on all the Panels in T3 Control Cubicle at Yandev Transmission Substation
- Installation and Commissioning of Agbor new feeder 6 VT (33kV) replacing decommissioned one at Agbor Transmission Substation
- Replacement of vandalized tower members on Calabar/Adiabo 132kV line tower T21 at Adiabo Transmission Substation
- Mounting and Installation of 6No current transformers on 111 B9J bay at 330kV Jebba G/S replacing decommissioned ones.
- Installation and Commissioning of a new XD 33kV circuit breaker on Life camp 33kV Lifecamp feeder at Katampe Transmission Substation
- Installation, wiring and testing of 3No 330kV Capacitor Voltage Transformers on 150MVA, 330/132/33kV Inter Bus Transformer Primary Circuit
- Installation and commissioning of a new 132/33kV 500kVA earthing Transformer one at T/Mafara Transmission Substation
- Installation and commissioning of a new current transformer on the three phases at the T1 30MVA transformer secondary side at Omuaran Transmission Substation
- Installation and Commissioning of a new 33kV circuit breaker one at Aba Transmission Substation
- Installation of 2No. of IoT meters on power station lines (PS1 & PS2) relay panels with the IoT teams.
- Installation and Commissioning of a new 33kV circuit breakers in Life Camp Feeder Bay at Katampe 2 TS, 132/33kV Kukwaba Transmission Substation and Installation of 20No. batteries on Bank 1 and replacement of 7No. faulty cells on Bank 1 at 132/33kV Kubwa Transmission Substation
- Installation of 1No. 110V DC charger at Omotosho Phase 2, 330kV Relay Room
- Installation and Commissioning of 2No. distance protection relays at Ugwuaji 330kV Transmission Substation
- Installation and Commissioning of a new lightening arrester on 132/33kV 60MVA transformer T2A secondary at Kaduna Town Transmission Substation
- Decommissioning of burnt Bus coupling Isolator B-stack, Installation and Commissioning of a new one on 33kV 60 MVA Tr1 & 60MVA TR2 was completed at Dan Agundi Transmission Substation .
- Installation of new isolators and CTs at Dan Agundi Transmission Substation
- Commissioning of a new Battery bank at Alaoji Bank A, Alaoji Transmission Substation
- Installation and Commissioning of 330kV GE Circuit Breaker on Bus Section CB Bay at Jebba Transmission Substation
- Routine maintenence of substations, towers, lines and replacement of broken insulators as well as lines clearing were also carried out nationwide

DURBAR FESTIVAL

By Zainab Shehu

Vice-President, Prof. Osinbajo, SAN, and Emir of Kano at the 2022 Kano Durbar Festival, Emir of Kano's Palace, Kano State

Origin

The Kanem empire is said to be the longest empire to rule in African history. It is well known for its trade and contribution to pre-colonial African history. It is said to have been created around 700AD under the Nomadic Tebu speaking Kanembu who were forced towards fertile land around Lake Chad due to political reasons, with its capital at Njimi. Kanem ruled by the Duguwa dynasty and was later replaced by the Syfawa dynasty in the 11th century. The Syfawa dynasty ruled until the 19th century.

Borno Empire was a continuation of Kanem empire, it became even bigger than Kanem Empire at its peak. With rapid expansion, it became known as the Kanem-Borno Empire which was very influential mostly in areas of trade, iron, and horsemanship. The peak of their influence emerged under the reign of Mai Idriss Alooma.

Birth of the Kanuri People

Intermarriages between the Kanembu and Borno people when the Kanembu were forced to move to Borno, created the now-known people and language called the Kanuri. The Kanuri people are mostly found in the present Borno State in the North Eastern part of the country and they are the dominant tribe in Borno State. They are also found in the neighboring state of Yobe in Nigeria and neighboring countries of Chad, Niger, and Cameroon.

The Borno Emirate was formed towards the end of the 20th Century and headed by the descendants of the rulers of the Borno Empire. The empire has been an Islamic state since the 11th Century when their ruler Umme (later known as Ibn Abd al-Jalil) became a Muslim.

The Palace of the Shehu of Borno (as the traditional ruler is called) is located in Maiduguri, the Borno State capital. The current traditional ruler is Abubakar Ibn Umar Garbai El-Kanemi.

The Durbar Festival

Durbar is a prominent festival celebrated in the northern region of the country during the Muslim festive period of Eid-el-Fitr

(marking the end of Ramadam) and Eid-ud Kabir. It is a cultural and religious festival organised by the palaces of host Emirates.

Although widely celebrated, the nature of every Durbar reflects the state's cultural and historic values. The way the festival is celebrated in Kano differs from the way it is celebrated in Zaria or Borno. It is generally a significant royal display of horsemanship mainly organized to mark important occasions and the two annual Sallah festivities.

The Durbar is characterized by royal horsemen, dances and gorgeous horses, trumpeters led by the Shehu, Emirs, District heads and other traditional title holders as the case may be.

The festival starts on the morning of the Eid when men and women make their way to the Eid ground at Ramat Square in the capital city of Maiduguri for prayers. The Shehu and his entourage together with traditional title holders, politicians, and other dignitaries will be in attendance.

As soon as the prayers are concluded, the Shehu is escorted back to his Palace in a colourful mounted parade with horsemen, musicians, and artillerymen. At the festival, noblemen travel to pay homage to the Shehu and reaffirm their loyalty to their emirate. When the monarch arrives the Palace, he ushers in his guests who are usually the Governor(s), traditional title holders, and other important personalities from his and other emirates.

Emir of Kano, His Royal Highness Aminu Ado Bayero riding on a decorated house during the festival

In the evening, the district heads in company of their people all on beautifully adorned horses, come to pay homage to the Shehu one after the other in their full regalia. The contingents usually showcase beautiful attires which symbolise royalty, the custom and tradition of Kanuri as well as the emirate. Other side attractions include horse racing which is usually done at the end of the Durbar.

Men riding on decorated horses at the Festival

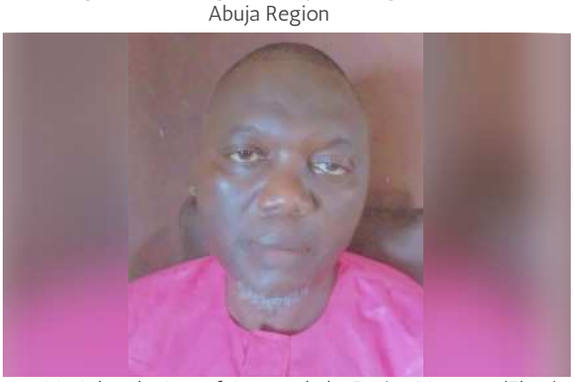
Retirement

Engr. Olujimi Adetola, General Manager, Technical Services

Engr. Ismaila Abdullahi, Regional Operations Manager, Abuja Region

Engr. Innocent Agah, Principal Manager, (SO), Abuja Region

Mr Omosebi Babatunde Oladele, Senior Manager (PC&M), Akangba Sub-Region



Mr Adegoke Lateef Arogundade, Senior Manager (Elect) Ikeja West Sub-Region

Mr Olatayo Raufu Aremu, Manager, (PC&M), Akangba Sub-Region

Mr Adeleye Sunday, Manager, (Elect Mtce), Papalanto Sub-Region

Mrs Adesunloye Janet Olubunmi, Officer II (Admin) Ajah Sub-Region

WORD SEARCH PUZZLE

TRANSMISSION TOWER PARTS

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

Find the following words in the puzzle.
Words are hidden → ↓ and ↘ .

ANCHORBOLT
BASEPLATE
BEAM
BODY
CAGE
CIRCUIT
CROSSARM
FORK
GROUNDWIRES
INSULATORSTRING
LEG
PEAK
WAIST
WINDOW

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Ali Bukar Ahmed
Ivie Ehanmo

FEEDBACK PAGE

Peter Akpenka
Thanks for the update. Such timely engagement with the public is good for better customer relationship. We also hope you will keep us posted on your findings of what caused the outage.

6w Like Reply Hide

Imrana Daura
Kudos to the him and the TCN Management. TCN is doing a very great job in ensuring adequate transmission of bulk electricity to the Nation.

6w Like Reply Hide

Adamu De-Fine Art
You did the right thing at a right time by notifying the affected areas as early as possible, we really appreciate your effort

6w Like Reply Hide

Usha George @Ushasaai14 · 03 Oct
Replying to @TCN_NIGERIA @Jummie_Adeola and 4 others
You guys are doing amazing and with this efforts and target it will be a thing to achieve..God bless Nigeria

1

Ndueso Jonathan
It's indeed a fruitful deliberation. Kudos to the host EKEDC and TCN

6w Like Reply Hide

Most relevant is selected, so some comments may have been filtered out.

Imrana Daura
Good one there. May God continue to uplift TCN

6w Like Reply Hide

TRANSMISSION COMPANY OF NIGERIA

TCN

We stock our stores because we understand the dynamics of sustaining electricity supply services.

At TCN, our driving force is to serve customers more efficiently by quickly responding to needs and cutting downtimes with adequate spares in our stores.

14, Zambezi Crescent, Maitama, Abuja.

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