

Review of NERC's Order on the Establishment of ISO for the NESI

OALP POWER NEWSLETTER

INTRODUCTION

Following the unbundling of the Nigerian Electricity Supply Industry (NESI) and pursuant to the provisions of the Electric Power Sector Reform Act, 2005 (EPSRA), the generation and distribution subsectors were privatised in November 2013, while the transmission subsector remained governed, owned and managed by the Transmission Company of Nigeria (TCN).¹ The TCN is comprised of three functional departments, namely: (x) Transmission Service Provider (TSP); (y) the Market Operator (MO) and; (z) the System Operator (SO)

Despite the high-performance standards expected from the transmission subsector, the current transmission network has demonstrated poor, inconsistent, and fragile performance over the years. The instability observed in the transmission network can be attributed to the inadequacy of the power evacuation entity, which has not undergone significant development and still relies mainly on manually controlled network devices. Hence, the clamour for separation of the SO and MO from the TCN. The belief is that the unbundling and independence given to the SO will improve its functions aided by the use of systems that are technologically driven to enhance grid stability.

Thus, pursuant to the enactment of the Electricity Act, 2023 (the Act or the EA), one of the objectives of the EA is to promote policy and regulatory measures to ensure the expansion of transmission networks in Nigeria to address any imbalance in the existing transmission infrastructure thereby establishing a reliable, efficient, and cost-effective transmission system². Specifically, Part IV, Sections 15- 32 of the Act provides for the incorporation and licensing of an Independent System Operator (ISO).

In furtherance of the provisions of the Act on the establishment of an ISO, the Nigerian Electricity Regulatory Commission (NERC or the Commission), issued an order on the establishment of the independent system operator (Order No: NERC/2024/45) dated April 30, 2024 (the Order) and this Order took effect on May 1, 2024.

The purpose of this newsletter is to discuss the provisions of the EA on the establishment of the ISO as well as the key provisions of the Order. We shall also highlight the benefits, opportunities and challenges that arise therefrom for NESI and the Nigerian economy.

1. In 2012, the TCN signed a three-year Management Contract for the TCN with Manitoba Hydro International (MHI) Ltd. of Canada to enable MHI manage TCN's electrical power transmission, system operation and market operation undertakings, as well as train TCN personnel. In 2015, the contract was extended for an additional one-year term. The Federal Government of Nigeria (FGN) maintains its shareholding and ownership in the TCN through the Ministry of Finance Incorporated (MOFI) and the Bureau of Public Enterprises (BPE). See: Nigeria System Operator, "Federal Government Extends Management Contract with Manitoba Hydro Intl" <https://www.nsong.org/MediaPublicity/NewsDetails?NewsID=33>

2. Section 1(b) of the EA.

TRANSFER PROVISIONS UNDER THE ELECTRICITY ACT

Setting Up the ISO

Section 15 of the Act provides for the incorporation and licensing of the ISO by the TCN. Explicitly, the Act provides that the ISO may be an independent company limited by shares or have such ownership and governance structure as the Commission may specify and upon the incorporation of the ISO, the ISO shall immediately apply to the Commission and be licensed by the Commission as an ISO, such license shall be a system operation license³ and shall perform such market and system operation functions as stipulated under the Act, terms of its license and on such other terms and conditions as the Commission may direct.

Further, TCN is expected to transfer all its assets and liabilities that relates to market and system operations functions to the ISO (the **Transfer**) and it is envisaged that this transfer arrangement will be effectively and contractually achieved through a novation agreement.⁴

Upon being set up and further to Section 16(2)(d), the ISO shall negotiate and enter into contract for the procurement of ancillary services with independent power producers, successor generation licensees to perform market and system operations and the income and property transferred to it by the TCN or whenever derived shall be applied solely towards the promotion of its objects as set out in its incorporation documents, and no portion of it shall be paid or transferred directly or indirectly by way of dividend, or bonus, by way of profit to the subscribers⁵.



It will appear that the object of the ISO as provided Section 16(2) (d) of the EA above contradicts the proposed corporate structure of the ISO as contemplated by the EA in Section 15 which is, an independent company limited by shares. Evidently, the object of the ISO as stated aligns more with the incorporated ISO being a company limited by guarantee and not by shares. Expectedly, this will ensure that the functions of the ISO are effectively achieved as the profits made from the ISO will be ploughed back into the company's business and thereby applied towards the objects of the ISO.

IMPLEMENTATION PROVISIONS UNDER THE ORDER

In exercise of its powers under Sections 15 and 16 of the EA, NERC issued the Order which prescribes that the Bureau of Public Enterprises (**BPE**) and the Ministry of Finance Incorporated (**MOFI**) shall be the initial subscribers to the ISO for the purposes of incorporation at the Corporate Affairs Commission (**CAC**). However, the final shareholding structure will be determined after consultations with the government, market participants, and industry stakeholders.

Further, the Order provides that subject to an availability search at the Corporate Affairs Commission, the name of the company shall be "Nigerian Independent System Operator of Nigeria Limited (**NISO**)". The objects of the NISO shall be as set out in Section 16(2) of the EA.

Notably, the NISO⁶ is required to:

- 1 hold and manage all assets and liabilities concerning market and system operation on behalf of market participants and consumer groups or such stakeholders which NERC may specify;
- 2 carry out all market and system operation-related contractual rights and obligations novated to it by the TCN;
- 3 negotiate and enter into contract for the procurement of ancillary services with independent power producers, successor generation licenses, etc., and generally execute market and system operations functions specified under the EA and the terms of its license in the interest of market participants and system users;

3. Section 67(1) of the Act.
4. Section 15(2)(a) of the Act.
5. Section 16(2) (d) of the EA
6. Section 16(2) of the EA

4

carry out all the market and system operation-related contractual rights and obligations novated to it by the TCN; and

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apply the income and property transferred to the NISO by the TCN or whensoever derived shall be solely towards the promotion of its objects as set forth in its incorporation documents and no portion thereof shall be paid or transferred.

In compliance with Section 15(2) (c) of the EA, which mandates a smooth industry transition, the Commission, in the Order, established a clear timeline for transferring the market operations portion of TCN's business. This Order requires TCN to identify and map the relevant assets and liabilities by June 30, 2024, and submit this information to the Commission and the BPE⁷.

The parties are expected to complete the Transfer no later than 31 August 2024 (referred to as **Completion Date**). Within 7 (seven) days of the Completion Date, the TCN is required to relinquish its system operation license to the Commission.

Further to the provisions of the Order, the BPE shall through the National Council of Privatisation conclude the transfer of all market and system operations assets and liabilities held by TCN to NISO in the following manner⁸:

- i. All bonds, hypothecations, securities, deeds, contracts, instruments, documents and working arrangements pertaining to the market and system operation that subsisted immediately before or on the completion date of the transfer ("**Transfer Date**" or "**Completion Date**") to which TCN was a party shall, on and after that date, be as fully effective and enforceable against or in favour of NISO as if, instead of TCN, NISO had been named therein;
- ii. Any cause of action or proceeding pertaining to the market and system operation of TCN which existed or was pending by or against TCN that subsisted immediately before or on the Transfer Date shall be

enforced or continued, as the case may be, on and after that date by or against NISO in the same way that it might have been enforced or continued by or against TCN had the Order not been passed;

- iii. Every person employed by TCN to perform market and system operations immediately before the Transfer Date shall be transferred to the service of NISO on terms no less favourable than those enjoyed by him/her immediately prior to his/her transfer. The service rendered by such employee transferred from TCN shall be deemed service with NISO to determine employment-related entitlements as specified in relevant laws of employment in Nigeria; and

Until such time as conditions of service is drawn up by NISO;

- i. the terms and conditions of service applicable to employees of TCN shall continue to apply to every person transferred to the NISO as if every such person were still in the service of the TCN; and
- ii. NISO shall continue to contribute towards a pension scheme to which TCN was contributing in respect of persons in the employment of the TCN, prior to the Transfer Date.

The foregoing provisions aim to ensure a smooth transition of the market and system operation functions from TCN to NISO with minimal disruption thereby ensuring a seamless handover of operations, employee rights, and legal responsibilities during the transfer from TCN to NISO.



7. Paragraph 10(B) of the Order
8. Paragraph 10(C) of the Order

Additionally, the Order, in furtherance of Section 28 of the Act⁹, states that the transfer shall not be deemed to (x) constitute a breach, termination, repudiation, or frustration of any contract, including a contract of employment or insurance; (y) constitute a breach of any Act, regulation, or by-law; (z) or constitute any event of default or force majeure; (xx) give rise to a breach, termination, repudiation, or frustration of any licence, permit or other right; (yy) give rise to any right to terminate or repudiate a contract, licence, permit or other right; and (zz) give rise to any estoppels.

These provisions aim to protect all contractual arrangements among stakeholders, including employees of TCN from any unintended legal consequences arising from the transfer of market and system operations. By stating that the transfer doesn't constitute a breach of contract, regulations, licenses, etc., these clauses prevent potential disruptions or legal challenges due to the ownership change. This helps ensure a smoother transition with minimal legal or contractual complications.

Also, the transfer shall not create any new cause of action in favour of (x) a holder of a debt instrument that TCN issued before the Transfer Date; and (y) a party to a contract with TCN that was entered into before the Transfer Date. Thus, the Order meticulously safeguards legal continuity during the transfer by explicitly stating that it will not disrupt existing contracts, regulations, licenses, or trigger new legal actions from creditors or those with prior agreements with TCN. This ensures a smooth handover with minimal legal complications and protects all involved parties from unintended consequences arising from the ownership change.

FUNCTIONS OF THE ISO

Upon incorporation, the ISO will carry out the following functions as provided under Section 67(1) of the Act as follows:

1. **Generation scheduling, commitment, and dispatch:**

The ISO shall be responsible for the optimal operation of power generation resources over a specific period, typically on a day-ahead basis. In executing this function, the ISO shall select specific power plants

that will be online and available to generate electricity within a given scheduling period. The ISO shall ensure the real-time operation of power generation resources to match the actual electricity demand as it occurs using systems like Supervisory Control and Data Acquisition (SCADA), Advanced Metering Infrastructure (AMI) and Demand Response programs;

2. **Transmission scheduling and generation outage co-ordination:**

The ISO shall plan and coordinate the usage of transmission network infrastructure to facilitate the efficient and reliable transfer of electricity from power generation sources to distribution systems or other interconnected grids. The ISO shall also manage and coordinate the planned maintenance or forced outages of power generation units to ensure minimal impact on the power system's reliability and stability;

3. **Transmission congestion management:**

The ISO shall manage and mitigate congestion on transmission lines or corridors within a power system. Congestion occurs when the demand for transmission capacity exceeds the available capacity on a specific line or within a specific area of the transmission grid;

4. **International transmission co-ordination:**

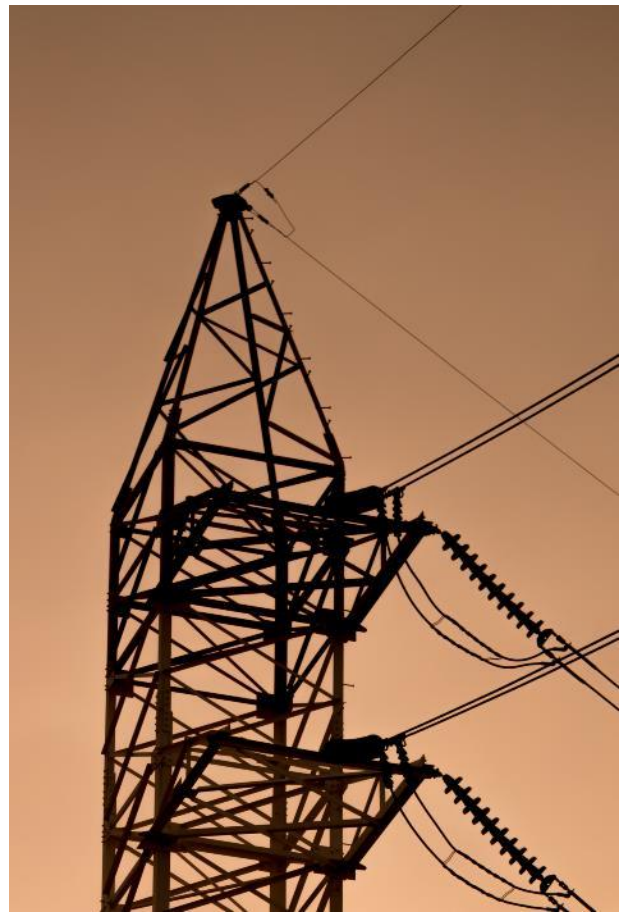
The ISO shall be responsible for the planning, coordinating, and managing the exchange of electricity across international borders. In undertaking this function, the ISO may facilitate collaboration and cooperation between neighbouring countries or regions to ensure reliable and efficient cross-border power flows;

5. **Procurement and scheduling of ancillary services and system planning for long term capacity:**

These include support services required to maintain the stability, reliability, and quality of electricity supply in the power sector. The procurement and scheduling of ancillary services involve activities to ensure the availability of these services to address grid contingencies and operational requirements;

9. *This stipulates that the transfer of the employees of the ISO shall be on terms not less favorable than those enjoyed by them prior to the Transfer. Further the employees shall be entitled to employment related entitlements and continuation of contribution to pension scheme by the employee and ISO as it was done prior to the Transfer.*

6. **Administration of the wholesale electricity market, including the activity of administration of settlement payments, in accordance with the market rules:** The ISO shall oversee and manage the operations of the market to ensure fair and efficient electricity trading among market participants. The activities range from the administration of settlement payments made on a monthly basis according to the market operator's settlement calendar; and
7. **Such other activities as may be required for reliable and efficient system operation:** These activities can vary depending on the specific context and requirements of the power system, but they generally aim to address any unforeseen challenges, maintain system reliability, and optimize operational efficiency.



OUR THOUGHTS

The incorporation of NISO marks a significant and transformative milestone in Nigeria's power sector, aligning the country with global best practices in electricity grid management. The establishment of the NISO is a visionary move that addresses the critical need for an independent, transparent, and efficient management of Nigeria's electricity transmission system. This approach has been successfully adopted by many advanced economies, yielding remarkable improvements in grid reliability, efficiency, and market transparency.

Countries such as the United Kingdom, United States and Canada have long recognized the benefits of independent system operators (ISOs). These entities operate autonomously, ensuring that the electricity market functions efficiently and transparently. In the United Kingdom, the National Grid Electricity System Operator (ESO) operates independently, ensuring fair access to the

grid and maintaining system balance, which has been crucial in managing the UK's transition to a low-carbon energy system¹⁰. In the United States, there is in existence, ISOs like the California Independent System Operator (CAISO)¹¹ and the New York Independent System Operator (NYISO), and these have significantly enhanced grid stability, facilitated renewable energy integration, and improved market efficiency¹².

In Ontario, the Independent Electricity System Operator (IESO) is responsible for managing Ontario's power system and ensuring reliable electricity supply. It operates independently, which allows it to make impartial decisions focused solely on maintaining grid stability and reliability. The IESO oversees the wholesale electricity market, facilitating competition and ensuring transparent market operation¹³.

10. <https://www.nationalgrideso.com/what-we-do/our-strategy>

11. <https://www.caiso.com/Documents/Integration-RenewableResourcesReport.pdf>

12. <https://www.nyiso.com/documents/20142/24130223/Grid%20Services%20from%20Renewable%20Generators%20Study.pdf/b47e9923-c2bd-faa6-e81d-29300dd56df2>

13. <https://ieso.ca/>

BENEFITS OF THE NISO IN THE NIGERIAN ELECTRICITY MARKET

The establishment of the NISO presents a multitude of benefits and opportunities that can significantly enhance the performance and sustainability of Nigeria's electricity sector. By leveraging advanced technologies, fostering skill development, and promoting economic growth, NISO can drive substantial improvements across various facets of the industry. These opportunities not only align with global best practices but also pave the way for a more resilient and efficient energy infrastructure in Nigeria. We have highlighted below some of the benefits vis-à-vis the opportunities which the establishment of the NISO presents in the Nigeria electricity market.

01

Enhanced Grid Reliability: Acting as an independent entity, NISO can make impartial decisions focused solely on grid stability and reliability, thereby reducing the frequency and duration of power outages. This will enable NISO to prioritize maintenance and upgrades of the transmission network, ensuring that the infrastructure is robust and reliable;

02

Market Efficiency: The incorporation of the NISO will facilitate a more competitive electricity market by ensuring transparent and non-discriminatory access to the transmission network for all market participants and thereby promoting fair competition;

03

Increased Investment Opportunities: It is expected that the establishment of the NISO will boost investor confidence through a transparent and predictable regulatory environment, essential for attracting domestic and foreign investment in the power sector. Consequently, this will lead to increased investments in infrastructure development, including generation, transmission, and distribution projects;

04

Renewable Energy Integration: With the global shift towards renewable energy, NISO can integrate renewable energy sources through the adoption of advanced technologies into the grid. This will ensure that Nigeria harnesses its vast renewable energy potential through renewable sources such as solar and hydropower. Thus, the NISO can spearhead the adoption of smart grid technologies, which will improve the efficiency, reliability, and security of the electricity supply. The adoption and implementation of advanced metering systems will help to provide real-time data on electricity consumption, will help to manage demand and reduce losses. Consequently, this will promote the adoption of environmentally sustainable practices within the electricity sector.

05

Economic Growth and Capacity Building:

The incorporation of the NISO will provide an opportunity for skills development including the training and development of a skilled workforce specialized in modern grid management and operations. This will also help with economic and industrial development, which in turn drives economic growth and development.

POTENTIAL CHALLENGES THE INCORPORATION OF THE NISO BRINGS IN THE NIGERIAN ELECTRICITY MARKET

While the incorporation of the NISO promises numerous benefits and opportunities for Nigeria's electricity sector, its implementation and operation may encounter potential challenges. These challenges span across financial, technological, and operational dimensions, each posing significant hurdles that must be addressed to ensure the successful establishment and functioning of NISO.

Understanding and proactively addressing these potential challenges is crucial for realizing the full potential of an independent system operator in enhancing grid reliability, market efficiency, and overall sector performance. Below are some of the potential challenges associated with the establishment and operation of NISO:

Funding and Financial Stability:

The establishment of the NISO is expected to involve significant initial capital outlay for infrastructure, technology, and capacity building. Considering the existing illiquidity challenge in the electricity sector, it is pertinent to have adequate financial planning and sustainability that will attract financing for the operations of the NISO and overall have a bankable operation.

Technological Challenges:

To achieve operational efficiency, the existing transmission infrastructure must be upgraded to meet modern standards through the utilization of smart grid technologies and advanced metering infrastructure. Further, with the adoption of modern standards and technologies, inherent cybersecurity risks will arise and thus the NISO must ensure that there are effective cybersecurity measures in place to safeguard these risks and operation of the grid while deploying modern technologies for its operations.

Operational Challenges: Effective coordination and integration with existing market participants, including distribution companies, generation companies, and regulatory bodies, is essential for an effective implementation of the NISO. Thus, misalignment or lack of coordination can lead to operational inefficiencies, and it is essential to build a team of highly skilled professionals

with expertise in modern grid management, regulatory compliance, and advanced technologies. The existing shortage of such specialized skills in the local workforce can pose a significant challenge.

RECOMMENDATIONS

While the establishment of the Nigerian NISO represents a significant step forward, its long-term success hinges on addressing potential challenges identified above. Additionally, these key areas demand focused attention for a sustainable implementation of the NISO:

Robust Governance Structure: There should be clear delineation of roles and establishment of a clear and sustainable governance framework for the operation of the NISO. This includes defining the roles and responsibilities of NISO, the Commission, and other stakeholders to avoid ambiguity and ensure effective oversight;

Ensuring Operational Independence: There should be minimal political interference in NISO operations and mechanisms should be established to safeguard its decision-making processes, fostering transparency and public trust;

Seamless Asset and Liability Transfer: The transfer of assets and liabilities from TCN to NISO necessitates a meticulous and well-documented process. A comprehensive novation agreement with clear timelines should be drafted to minimize legal loopholes;

Mitigating Challenges and Enhancing Bankability: A comprehensive strategy outlining how to address inherent and potential challenges is crucial. This strategy should also detail measures to enhance NISO's bankability, making it more attractive to potential investors and financing opportunities; and

Adherence to Legal Provisions: To ensure a legally sound and effective transfer, the TCN should be responsible for the incorporation of the ISO.¹⁴ Strict adherence to legal frameworks is critical for smooth implementation and it is pertinent for the Transfer process to be effectively implemented.

By meticulously addressing these considerations, Nigeria can ensure NISO's successful implementation. A well-structured, independent, and operationally efficient NISO is poised to play a transformative role in fostering a more transparent, efficient, and reliable electricity sector for Nigeria.

CONCLUSION

The establishment of the NISO represents a significant step forward in the transformation of Nigeria's transmission system and overall, the electricity sector. While this presents a number of benefits and opportunities, addressing the potential challenges is

crucial to ensure increased investors' confidence in the electricity market and consequently attracting funding for the successful implementation of the NISO's projects. By implementing the recommended strategies, Nigeria can overcome these challenges and fully realize the potential of NISO, leading to a more reliable, efficient, and sustainable electricity sector supply across all sectors. This initiative not only aligns Nigeria with global best practices but also paves the way for economic growth and improved quality of life for its citizens.

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