

MAY 2024

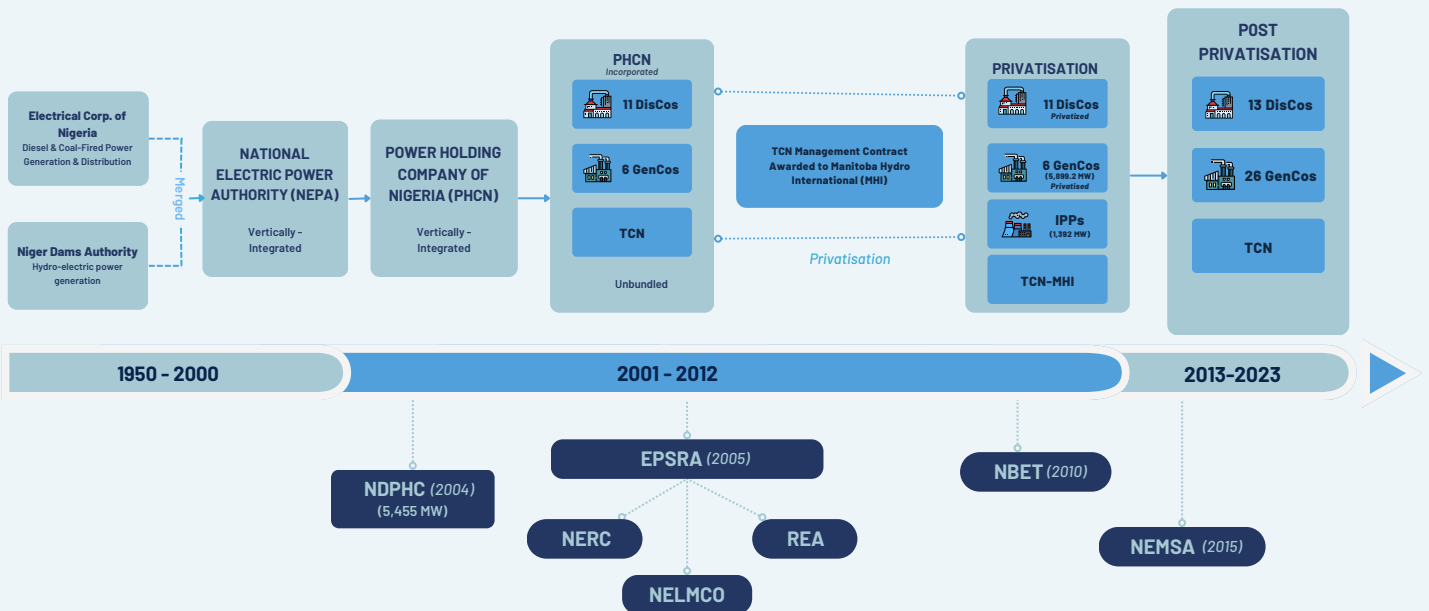
The Establishment of the Nigerian Independent System Operator



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INTRODUCTION

Evolution of Nigeria's Electricity Supply Industry



One would not be remiss in referring to the privatization of the Nigerian power sector as a “partial privatization” for two reasons. Firstly, the government maintained a 40 percent shareholding in all DisCos and the transmission subsector of the value chain remained entirely under government control through the Transmission Company of Nigeria (TCN).

The decision to establish a single entity for transmission services meant that TCN would play a three-part role in the market, as the Transmission Service Provider (TSP), Market Operator (MO) and System Operator (SO), but for only a short period.

The role of MO and SO was to be eventually transferred to a new entity which would serve as an Independent System Operator (ISO). This was a planned evolution prescribed in the Electric Power Sector Reform Act (EPSRA) 2005, the Market Rules, and most recently the Electricity Act of 2023 (EA).

1 PRESCRIBED EVOLUTION OF THE NIGERIAN ELECTRICITY MARKET

THE ESTABLISHMENT OF THE NIGERIAN INDEPENDENT SYSTEM OPERATOR



1 Prescribed Evolution of the Nigerian Electricity Market

The NESI Market Rules provide for a gradual development of the NESI mapped out in stages with clearly defined characteristics. These stages are:

1 Pre-Transitional Stage:

This was the initial stage of the privatization process where the Power Holding Company of Nigeria (PHCN) was created and subsequently split into the 6 initial GenCos and 11 DisCos we have today.

2 Transitional Stage:

This began on 1 February 2015. This stage is characterized by contract-based electricity trading and market competition.

3 Medium-Term Market Stage:

This is yet to commence. It will feature the introduction of competition at the generation level and a central balancing mechanism for the wholesale electricity market.

4 Long-Term Market Stage:

At this stage, the market will be open to broad wholesale competition and retail competition.



Before each market stage is announced, certain requirements must be satisfied, and a key requirement under EPSRA for the unbundling of TCN was that the market should have reached a stage of substantial privatisation. In this context, that would mean contract sanctity and enforcement, implementation of bank guarantees, cost-reflective tariffs, or cash-backed government subsidies, as well as substantial compliance with the Market Rules and Grid Code.

Last year, NERC issued its Market Competition Report in which it stated that the market had achieved a significant level of privatisation that indicated readiness for the next market stage which would be the Medium-Term Market.

1 Prescribed Evolution of the Nigerian Electricity Market

Today, it cannot be said that the NESI is characterized by all these elements. However, EPSRA has been repealed and the EA does not require substantial privatization for the unbundling of TCN; it simply provides that NERC may issue a directive “within such stage or period of the market as the Commission may in a written directive specify”. This means that NERC may issue an order for the unbundling of TCN at any time.

Furthermore, NERC stated that it held several stakeholder consultations to determine the readiness of the market for TCN’s unbundling, the appropriate legal entity and structure of the ISO and the governance structure of the ISO. From this, one can infer that significant thought was put into the process.

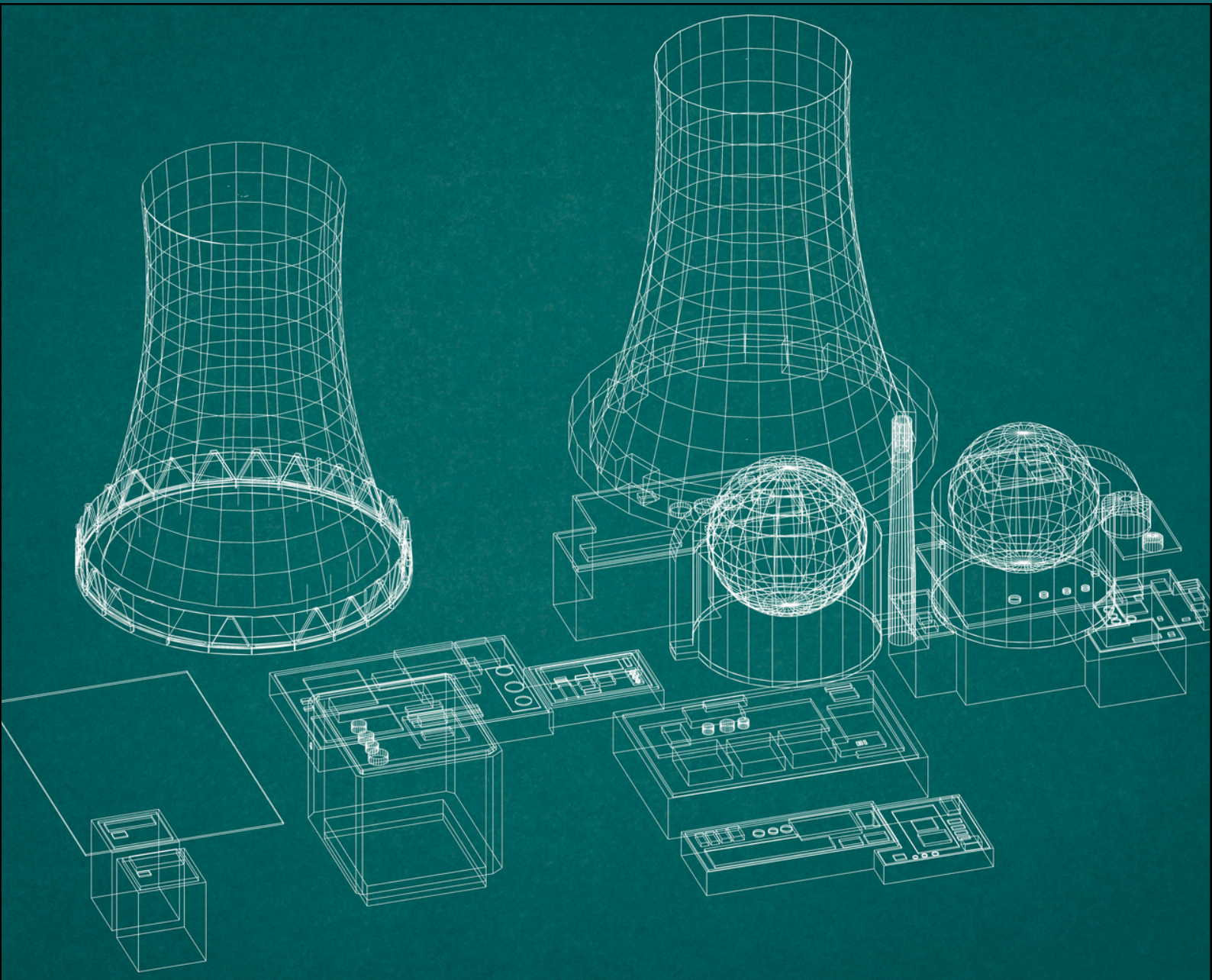
While the timing of the directive may be debated, it should be noted that this split of TCN is not a mere formality to signal compliance with prescribed procedures established at privatization. It is the application of industry best practices as TSP and ISO functions are typically handled by separate entities in a power market.



2

THE FUNCTIONS OF THE TSP, MARKET OPERATOR AND SYSTEM OPERATOR

THE ESTABLISHMENT OF THE NIGERIAN INDEPENDENT SYSTEM OPERATOR



2

The Functions of the TSP, Market Operator and System Operator

Let's delve deeper into the potential ripple effects of this decision and explore solutions for a more sustainable future.

Transmission Service Provider



Market Operator



System Operator



A Transmission Service Provider:

The TSP focuses on managing grid infrastructure, building, upgrading, maintaining, and expanding grid infrastructure.

B Market Operator :

The MO is the commercial administrator, responsible for creating and administering the Market Rules and collecting administrative and regulatory charges.

C System Operator :

The SO administers technical aspects of the grid such as generation scheduling, transmission scheduling, outage coordination, congestion management, procurement and scheduling of ancillary services and system planning for long-term expansion.

These three roles will remain with TCN until August 2024 when the new Nigerian Independent System Operator (NISO) will be fully established with all assets, liabilities, responsibilities, and rights of a fully separate entity.

On that date, all functions of the MO and SO will become the responsibility of the newly incorporated NISO.

2

The Functions of the TSP, Market Operator and System Operator

ISO MODELS AROUND THE WORLD¹

The ISO in a power market may take any of the following forms:

- **Independent Transmission System Operator (ITSO):** In this model, the SO and TSP functions are integrated, facilitating cohesive investment alignment with both long-term planning and short-term system dispatch. The UK's National Grid is a good illustration.
- **Legally Unbundled Transmission System Operator (LTSO):** This model entails the separation of system operation from other sector components, with transmission assets remaining under the same ownership as generation/production or retail. It is practised in France.
- **Independent System Operator:** This model features the SO operating independently, without owning transmission assets. A key advantage of this model is that it supports multi-jurisdictional operation and flexibility in an electricity market, as seen in the Pennsylvania, Jersey, Maryland (PJM) Power Pool.
- **Hybrid Model:** In this model, the ISO and TSP are detached from the remainder of the power system. The ISO operates in an asset-lite capacity, while the TSP lacks system operation responsibilities. This model is observed in Chile and Argentina.
- **Vertically Integrated Utility:** In this model, a single entity controls all aspects of electricity generation, transmission, distribution, and retail services. It represents a fully integrated approach where the electricity company owns and operates all components of the electricity supply chain. Nigeria practiced this model up until 2005 when the privatisation process began.

¹Pollitt, Michael, 2008. "The arguments for and against ownership unbundling of energy transmission networks," *Energy Policy*, Elsevier, vol. 36(2), pages 704-713.



3

UNBUNDLING OF THE ISO UNDER THE EA 2023 AND NERC'S ORDER

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3

Unbundling of the ISO under the EA 2023 and NERC's Order

Unlike the transitional provisions for existing DisCos in the EA which requires DisCos to incorporate subsidiary companies (SubCos), the NISO will be an entity separate from TCN.

The primary difference between the TSP and ISO is that the TSP will be responsible for the physical components in the transmission network while the ISO will focus on managing the day-to-day operations of the grid. This makes the ISO a critical player in the power supply chain.

Unlike EPSRA, the EA 2023 provided some precise guidance on the unbundling of TCN. Specifically, it provides that:

- NERC will issue a directive directing TCN to incorporate the ISO which may be a company limited by shares or have any other governance structure
- Once incorporated, the ISO will apply to NERC for a license to serve as the MO and SO
- TCN will transfer all assets and liabilities pertaining to market and system operations to the ISO
- TCN will maintain its role as TSP, be responsible for transmission assets and liabilities and perform its relevant functions as outlined in its license.
- NERC will provide a clear plan and timeline for the transition process ensuring industry operations are not disrupted.
- NERC will also determine the shareholding of the company in consultation with relevant stakeholders
- NERC will ensure that the incorporation documents include all objects of the ISO as outlined in the EA.

Based on the provisions of the EA, NERC released a directive on the unbundling process as follows:

- BPE is to incorporate, no later than 31st May 2024, a private company limited by shares to conduct the market and system operation functions stipulated in the EA and the terms and conditions of the system operation license issued to TCN.
- The company shall be known as the **Nigerian Independent System Operator (NISO)**.
- Its objects will be those specified in the Act which include:
 - Management of all assets and liabilities related to market and system operation on behalf of market participants, consumer groups, or other stakeholders specified by the Commission.
 - Conducting all market and system operation contracts and obligations previously held by the Transmission Company of Nigeria (TCN).
 - Negotiation of contracts to procure ancillary services from independent power producers, successor generation licensees, etc. It will also carry out market and system operations functions as specified in the Electricity Act and its license, in the interest of market participants and system users.
 - The company will take over all market and system operation contracts and obligations previously held by TCN.
 - Any income or property transferred to the company by TCN or earned by the company will be used solely to promote its objectives as stated in its incorporation documents. No part of this income will be paid out as dividends, bonuses, or profits to the subscribers. However, the company can pay fair remuneration to contractors or staff for services rendered to the company.
- BPE and Ministry of Finance Incorporated shall be the initial subscribers. (This is expected as TCN is currently fully government-owned)
- TCN is to conclude the identification and mapping of assets and liabilities pertaining to the SO and MO portions of its operations and send this to NERC and BPE by 30 June 2024.

3

Unbundling of the ISO under the EA 2023 and NERC's Order

- BPE will conclude the transfer of all MO and SO assets and liabilities held by TCN through the National Council on Privatization via the following process:
 - All bonds, securities, deeds, contracts, instruments, documents, and working arrangements will be fully effective and enforceable against NISO.
 - Any cause of action or proceeding about TCN's market and system operation will be enforced or continued against NISO.
 - No action or proceeding against NISO will commence against any transferred employee, asset, liability, right, or obligation of the time for bringing that action has elapsed.
 - Relevant employees will be transferred to NISO on terms not less favourable than those enjoyed before their transfer.
 - Until conditions of service are drawn up by the NISO, TCN's terms and conditions will continue and the NISO will continue to make pension contributions on behalf of employees.
- This transfer is to be completed by 31 August 2024.
- Within seven days from the completion date, TCN will submit its system operation license to the Commission.



4

ADVANTAGES & DISADVANTAGES OF UNBUNDLING TCN

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4.1. Advantages of Unbundling TCN

Unbundling TCN will support the development of NESI in the following ways:

- **Improved System Management and Accountability:** This separation of roles ensures a more streamlined and efficient operation of the power grid. There will be better coordination, enhanced system management, and increased accountability.
- **Solving Persistent Challenges within TCN:** The restructuring of TCN into ISO and TSP is designed to address the long-standing challenges within TCN, such as operational inefficiencies, system reliability issues, and management complexities. This restructuring aims to overcome these challenges and enhance overall performance as the two entities will focus on separate and specific objectives/challenges.
- **Attracting Investments, Promoting Innovation, and Ensuring Sustainability:** The ISO model boosts investor confidence as it ensures impartial dispatch of power. This restructuring is poised to create an environment conducive to growth, innovation, and long-term sustainability in the electricity market.

However, the success of this restructuring will depend on various factors, including effective implementation, proper oversight, and adequate resources.

4.1. Disadvantages of Unbundling TCN

- **Additional Cost:** There may be high operational and governance costs involved in setting up a new entity with new offices, information systems and branding.
- **Lack of Investments:** Over the years, TCN has been criticized for failing to put the required technology in place to support optimal grid performance and the transfer of SO and MO responsibilities to the NISO will not automatically solve this problem. There have to be targeted efforts to attract the right investors that will support the acquisition of advanced technologies to improve efficiency and reliability such as full Supervisory Control and Data Acquisition (SCADA) capability which offers real-time monitoring and control of the grid. If adopted, SCADA can reduce outages and facilitate data analysis, leading to better decision-making and operational efficiency. These investments are also required for upgrading worn-out transmission lines to strengthen the flow of power in the network.

5

CONCLUSION

THE ESTABLISHMENT OF THE NIGERIAN INDEPENDENT SYSTEM OPERATOR



5 Conclusion

The restructuring of the TCN marks a significant turning point in the evolution of the nation's power sector. By spearheading this transition, NERC aims to improve efficiency and reliability. However, the success of this restructuring hinges on three key factors: effective implementation, proper oversight, and adequate investments. While challenges are inevitable, this initiative represents a necessary step towards boosting investor confidence.

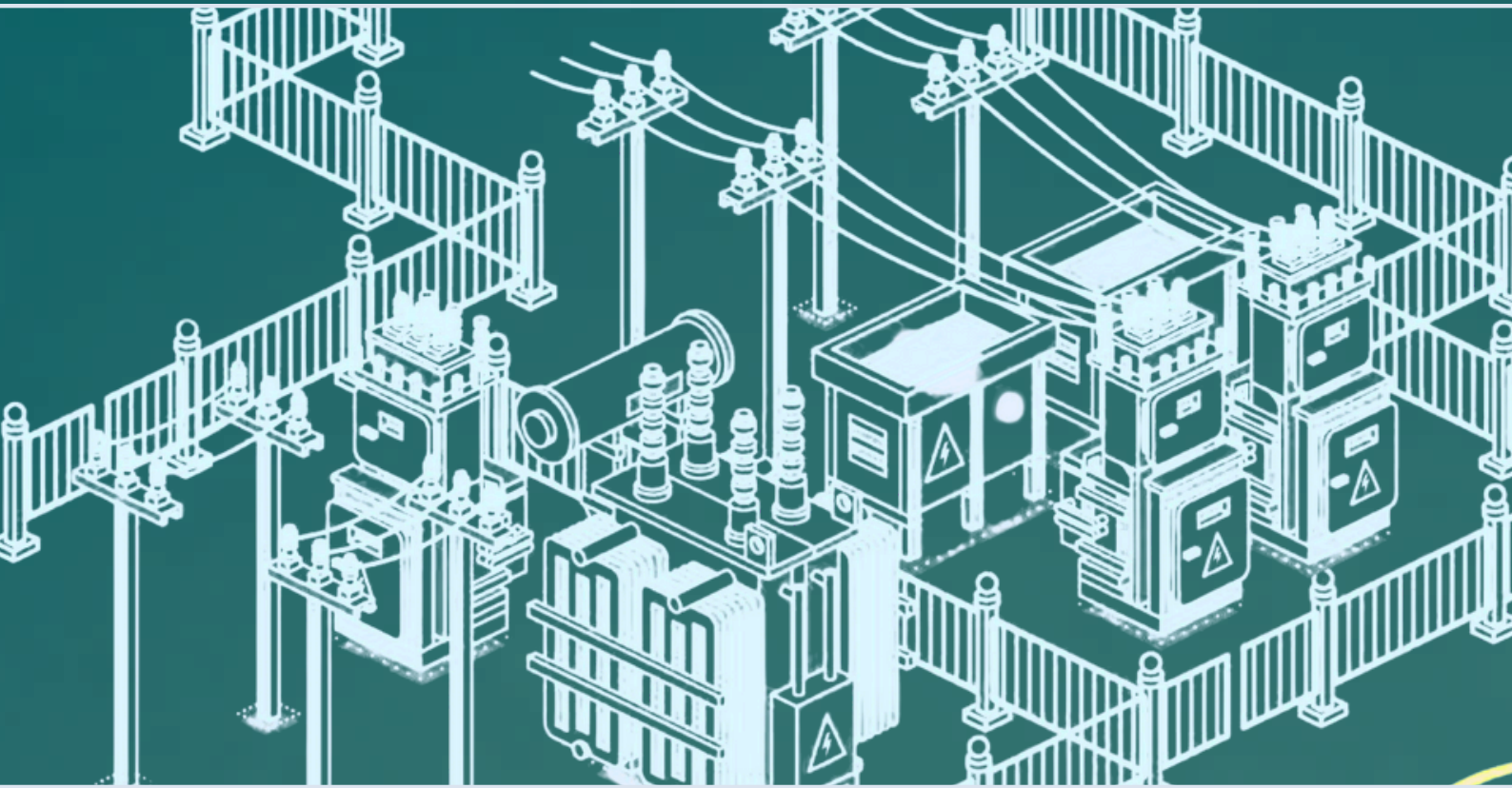
The potential benefits of this restructuring extend far beyond immediate improvements. A stable and dependable power sector fosters an environment ripe for investment. By bolstering investor confidence, the restructuring can pave the way for significant capital inflows. These investments, in turn, can fuel the development of new generation capacity and strengthen the transmission infrastructure, ultimately delivering a more robust and sustainable power supply for the nation.

Effective implementation of the restructuring plan is paramount. A well-defined roadmap with clear roles and responsibilities for the newly formed entities that emerge from the TCN is essential to ensure a smooth transition and minimize disruptions. NERC's role as the regulatory body becomes even more critical as it oversees the new system, guaranteeing transparency, accountability, and efficient operation.



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