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# REGIONAL ELECTRICITY REGULATORY AUTHORITY (ERERA) IMPLEMENTATION PLAN TO BOLSTER TRANSPARENCY AND DATA AVAILABILITY IN THE ELECTRICITY MARKETS OF WEST AFRICA



**July 2024**

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# Regional Electricity Regulatory Authority (ERERA) Implementation Plan to Bolster Transparency and Data Availability in the Electricity Markets of West Africa

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National  
Association of  
Regulatory  
Utility  
Commissioners

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## I. Introduction

The Economic Community of West African States (ECOWAS) represents a regional political and economic union of 15 countries located in West Africa. Created with the aim of achieving economic integration and collective self-reliance, ECOWAS is a cornerstone for regional cooperation, enhancing economic stability, and fostering a conducive environment for development. Within this framework, the ECOWAS Regional Electricity Regulatory Authority (ERERA) plays a pivotal role in regulating cross-border electricity exchanges, ensuring a harmonized regulatory environment that fosters the development of a sustainable and reliable electricity market.

The regional electricity market, pivotal for economic development and integration in West Africa, faces numerous challenges, including insufficient transparency in operations, pricing mechanisms, and regulatory compliance. The lack of transparency not only hampers efficiency and trust but also deters potential investment, which is crucial for the sector's expansion and modernization. Recognizing these challenges, there is a compelling rationale for enhancing transparency in the regional electricity market. Improved transparency is expected to foster a more competitive market environment, enhance investor confidence, and ensure equitable access to information, thereby facilitating better decision-making processes for all stakeholders.

To address these challenges, the implementation of comprehensive transparency procedures is paramount. These procedures aim to establish clear, accessible, and reliable information-sharing mechanisms regarding market operations, regulatory compliance, and pricing. The specific objectives of adopting such transparency procedures include improving market efficiency, ensuring fair competition, enhancing consumer protection, and attracting investments to the sector.

This implementation plan outlines both short-term and long-term goals. In the short term, the focus will be on establishing the foundational regulatory and technological frameworks necessary for enhancing transparency. This includes the development of regulations supporting open access to system and market data and the deployment of the necessary information technology (IT) infrastructure for data collection and dissemination. In the long term, the goals shift toward sustaining the achieved levels of transparency, continuously improving data accuracy and accessibility, and fostering a culture of openness and accountability within the regional electricity market.

Through the realization of these objectives and goals, the implementation of a regional electricity market transparency procedure stands to benefit West Africa significantly. By laying down a foundation of trust and efficiency, ECOWAS and ERERA aim to catalyze the region's economic growth, ensure energy security, and promote sustainable development.

## II. Current Availability of Data, Market Maturity, and Transparency

The available responses to the questionnaires (See Annex II)<sup>1</sup> highlight a varied landscape in terms of market maturity and readiness for implementing the Regional Electricity Market Transparency Procedure. These insights are instrumental in tailoring the implementation plan to accommodate the specific needs and capabilities of each country within the ECOWAS region.

### **Data Availability and Management:**

For the countries that provided responses, it is possible to conclude that essential electricity market data, including load, generation, transmission, and, to a lesser extent, balancing and market operations are already collected. However, the frequency of data updates, the level of detail, and the tools used

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<sup>1</sup> Among the ECOWAS members, only Senegal, Liberia, Sierra Leone, and transmission system operator of Togo and Benin.

for data collection (primarily Excel and emails) indicate a need for strengthening data management infrastructures. In addition, Sierra Leone and Liberia mention the absence of regulations and guidelines for data disclosure, market reporting, and transparency, underscoring an area for regulatory enhancement.

**Market Maturity:**

Market maturity varies significantly among the responding countries. Sierra Leone’s electricity access rate at 36% and Liberia’s electrification rate at 30% highlight the challenges in reaching universal access. Senegal and Benin appear to be more advanced in terms of regulatory frameworks and market operations, pointing toward a disparity in market maturity levels within the region. The absence of a day-ahead load forecasting methodology in Liberia contrasts with Senegal’s use of sophisticated tools, indicating varied maturity levels in market operations and planning.

**Readiness for Transparency Procedure Implementation:**

Readiness to implement the transparency procedure is contingent on several factors, including the existing organizational structure, data management capabilities, and regulatory frameworks. Countries express a need for specific training programs to enhance data collection, validation, and submission capabilities. The variation in regulatory readiness, with some countries lacking essential regulations for data transparency, suggests a phased and flexible approach to the implementation of the transparency procedure.

**Flexibility and Phased Implementation:**

Acknowledging the differing readiness levels and market maturity, a flexible and phased implementation approach is paramount – to be elaborated upon below. The feedback also underscores the importance of considering interim technical and IT solutions to facilitate early wins in transparency enhancement. Countries like Senegal, with more developed infrastructures, could lead in early data population, while others with limited capabilities could follow a more gradual path to full participation.

In conclusion, the implementation period must prioritize the finalization and enactment of the Regional Electricity Market (REM) Transparency Procedure to remove, at a regional level, the regulatory gap in data disclosure and transparency. The implementation period should also include capacity-building initiatives tailored to the specific needs of each country, leveraging interim solutions to initiate transparency improvements. This tailored approach, coupled with a commitment to continuous improvement and regional collaboration, will be crucial in advancing toward a more transparent, efficient, and integrated regional electricity market in West Africa.

### **III. Flexible Implementation Strategy and Interim Solutions**

Following the introduction of the REM Transparency Procedure, it is imperative to underscore the philosophy of flexibility and phased implementation that underpins this initiative. Recognizing the diverse capabilities and readiness levels across member states in West Africa, the approach to implementing the transparency procedure should be adaptable, allowing for gradual participation to the platform.

The REM Transparency Procedure sets necessary standards for data reporting and transparency across the region. However, these standards, even though required, are aspirational for some countries in West Africa, meaning full compliance may be a multi-year journey for some countries. Meanwhile, countries such as Nigeria or Senegal, with more developed data management infrastructures, are anticipated to lead by example, providing the required data at an earlier stage. This staggered approach ensures that while the platform is technically ready to host comprehensive market data from the onset, the initial focus will be on facilitating participation at varying degrees of data completeness.

In line with the phased and flexible implementation strategy, the plan also advocates for the exploration and adoption of interim technical and IT solutions. Prior to the establishment or procurement of a customized platform software, interim solutions, as exemplified by the Ukrainian model of utilizing Tableau,<sup>2</sup> offer a pragmatic pathway to achieving increased transparency. These interim solutions will serve as a bridge, enabling tangible transparency outcomes from the early stages and allowing for the iterative development of the platform based on real-world usage and feedback.

By prioritizing flexibility, phased implementation, and the adoption of interim solutions, the REM Transparency Procedure is positioned to progressively enhance the transparency and efficiency of the West African electricity market. This approach not only accommodates the varied starting points of member states but also lays a foundation for continuous improvement and adaptation, ensuring that the ultimate goal of a fully transparent regional electricity market becomes a shared and achievable vision.

## IV. Phases of Implementation

### Phase I: Preparation and Planning

In the initial phase of implementing the REM Transparency Procedure, a strategic and collaborative approach is pivotal to laying a solid foundation for success. This phase sets the stage for a comprehensive roll-out of the transparency initiative and advised to be **no longer than six months**. It involves defining clear objectives and timetables, engaging stakeholders, and assessing the existing regulatory landscape to identify necessary updates or new regulations to support transparency.

The allocation of resources, both human and technological, is crucial during this stage to ensure the groundwork is laid for the development and eventual operationalization of the REM Transparency Platform. This phase marks the beginning of a transformative journey toward achieving a fair, efficient, and transparent electricity market in West Africa, setting the tone for the collaborative efforts required from all involved entities to realize the vision of a unified regional electricity market.

In the initial phase, aside from the pivotal role played by the System and Market Operator (SMO), both ERERA and national regulatory authorities (NRAs) are tasked with assuming preliminary responsibilities critical to setting the groundwork for the successful implementation of the REM Transparency Procedure. Below is the separation of main tasks among the stakeholders mentioned herein.

#### ERERA:

- **Supervision and Initial Implementation:** ERERA should leverage its supervisory authority to initiate the operational framework for the transparency procedure. It should take necessary steps to **ensure the foundational aspects of this procedure are communicated and understood across member states within its jurisdiction**, setting the stage for a unified approach to transparency.
- **Rule Review and Preliminary Updates:** ERERA should identify areas requiring updates or the introduction of new regulations to support the initial steps of implementation, ensuring the framework's relevance and effectiveness from the outset.
- **Human Resources:** ERERA should allocate a team to oversee the implementation process, including legal experts for regulatory review and communication teams to engage with member states. In this regard, ERERA should also allocate compliance teams to develop oversight and compliance mechanisms.

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<sup>2</sup> Please check: [Profile - neurc | Tableau Public](#)

### **System and Market Operator:**

- **Transparency Platform Preliminary Development:** The SMO should start with the organizational tasks for the REM Transparency Platform, focusing on the initial design and development. This includes laying out the operational, maintenance, and development plans for the platform, tailored to meet the transparency requirements outlined in the procedure.
- **Coordination for Initial Setup:** In this phase, the SMO should actively coordinate with potential data providers and initial users to understand their needs and expectations from the REM Transparency Platform. This coordination is crucial for ensuring the platform's design and functionalities align with stakeholder requirements.
- **Initial Monitoring Framework:** Before the platform becomes operational, the SMO should establish the monitoring frameworks and protocols for future compliance checks. It should also plan how to collect stakeholder feedback and compliance data, which will streamline the transition into the operational phase of the platform.
- **Manual of Procedures:** The SMO should draft the Manual of Procedure. This manual will serve as a foundational document that outlines all necessary information for data providers and other platform users. The drafting process should involve consultations with potential platform users to ensure comprehensiveness and usability.
- **Human Resources:** The SMO should form a project team that includes IT support staff, compliance officers and data analysts to lay out the platform's development plan and to design monitoring frameworks.

### **National Regulatory Authorities:**

- **Adoption of Preliminary Rules:** NRAs should focus on adopting the necessary preliminary rules and regulations to support the early stages of the implementation of the REM Transparency Procedure within their jurisdictions. This includes setting the legal and operational groundwork for future data collection and publication requirements.
- **Setting Up Compliance Oversight Mechanisms:** NRAs should start establishing mechanisms to oversee and ensure compliance with the new transparency procedures. This early preparation is vital for a smooth transition to the more detailed implementation steps in the subsequent phases, ensuring data providers are ready and aware of their obligations.

## **Phase 2: Development and Testing**

During the development and testing phase, to be concluded **within 12 months after Phase I**, the focus shifts to the meticulous construction and evaluation of the REM Transparency Platform. This period is characterized by intensive collaboration between the SMO and technical teams, aiming to translate the foundational groundwork laid in Phase I into a robust, secure, and user-friendly platform. Central to this phase is the iterative process of developing the platform's architecture, integrating advanced functionalities, and ensuring stringent security measures.

Concurrently, pilot testing with a select group of stakeholders not only tests the platform's technical capabilities but also its ability to meet the diverse needs of the West African electricity market. Feedback gathered during this phase is invaluable, driving refinements and enhancements that ensure the platform's alignment with the overarching goals of transparency, efficiency, and accessibility. Below is an elaboration of the activities envisaged to be realized in phase 2.

### **Design and Testing**

- **Platform Architecture Design:** The SMO should finalize the REM Transparency Platform, ensuring it supports high volumes of data and multiple user access levels without compromising on speed or security. The design must also incorporate future scalability to accommodate growing data volumes and user base.

On the other hand, the SMO can adopt temporary technical and IT solutions, as mentioned above. For instance, leveraging Tableau would offer a practical route to boost transparency ahead of finalizing bespoke platform software. Such provisional solutions pave the way for early transparency wins and guide the platform's evolution with valuable insights from actual use and feedback.

- **Functional Testing:** The SMO should conduct thorough testing of the platform's functionalities to ensure all features work as intended. This includes testing data submission processes, data retrieval and display functionalities, user management systems, and automated data collection features.
- **Security Testing:** The SMO must perform rigorous security testing, including penetration testing and vulnerability assessments, to identify and rectify potential security weaknesses. The goal is to ensure that the platform is resilient against cyber threats and data breaches.
- **User Acceptance Testing (UAT):** The SMO should engage a select group of stakeholders, including representatives from data providers, NRAs, and end-users, for UAT. This phase is critical for gathering feedback on the platform's usability, functionality, and overall user experience. Feedback from UAT should be used to make necessary adjustments and improvements to the platform.
- **Performance Testing:** The SMO should test the platform under various loads to ensure it can handle high data volumes and simultaneous user access without performance degradation. This is crucial for the platform's reliability, especially during peak usage times.
- **Compliance and Regulatory Testing:** The SMO should coordinate with ERERA and NRAs to confirm that the platform meets all regulatory obligations.

#### **Feedback Incorporation and Final Adjustments:**

- **Final Adjustments:** Based on feedback from the testing phase, the SMO should make final adjustments to the platform. This could involve adjusting functionalities, enhancing security measures, or improving user interface design for better usability.
- **User Guides:** The SMO should prepare and distribute comprehensive user guides and training materials to facilitate the transition for data providers and other stakeholders to the new system.
- **Training Sessions:** The SMO should develop and execute a series of comprehensive training sessions targeted at different user groups. These sessions should cover how to use the platform effectively, focusing on data submission procedures, data retrieval and analysis, and understanding user rights and responsibilities.

#### **Launch Preparation:**

- **Launch Plan:** The SMO should develop a detailed launch plan, including a timeline, stakeholder communication strategy, and post-launch support mechanisms. The plan should outline how the platform will be introduced to all users and how feedback will be collected and addressed post-launch.
- **Training Sessions:** The SMO should conduct a series of (remote and onsite) training sessions and workshops for data providers and other stakeholders to familiarize them with the platform and ensure a smooth transition to the new system.
- **Maintaining Focus:** This phase is crucial for ensuring the REM Transparency Platform is fully functional, secure, and user-friendly before its official launch. The SMO's focus on thorough development, rigorous testing, and stakeholder engagement during this phase sets the foundation for a successful platform that meets the transparency needs of the West African electricity market.

### **Phase 3: Launch and Rollout**

It is anticipated that the launch of the transparency platform will commence one year into the project timeline. However, recognizing the varying readiness levels across the member states, ERERA should

remain open to adjusting this timeline, ensuring that the kickstart aligns with the overall preparedness of the countries. Thus, there should not be a specific bounding deadline for the member countries to fully comply with the Transparency Procedure.

To facilitate a smooth launch and compliance with the transparency procedure, ERERA and the SMO are advised to use countries that possess the requisite capabilities for data compliance as anchors. The platform should have all data fields available for input by all countries from the beginning but the implementation in the early stages should focus on ensuring countries with necessary capabilities populate the data fields. This strategic approach ensures that the platform begins on a strong footing, becomes relevant as soon as possible as a data hub, and sets a benchmark for other countries to catch up.<sup>3</sup>

Furthermore, it is critical to incorporate flexibility for countries in their journey toward full compliance. This flexibility might manifest as allowances for delayed data provision or the submission of partial data sets, with a clear plan for completing and updating these submissions over time. Countries will, therefore, be encouraged to develop their respective action plans to be submitted to ERERA on when full compliance is expected to be achieved by respective countries. Such adaptability ensures that all member states can progress toward full transparency at a pace that respects their unique challenges and capacities, fostering a more inclusive and supportive environment for achieving the broader goals of the transparency initiative.

Additionally, in the spirit of maintaining clarity and transparency post-launch, it is crucial that any data not provided by the stipulated deadlines be explicitly marked as “not entered” rather than “not available”<sup>4</sup> within the respective sections of the platform. Such a practice will not only uphold the integrity of the platform but also provide clear indicators of where data gaps exist, facilitating targeted efforts to address these gaps and encourage complete data submission in future cycles.

Along with ensuring a smooth adoption of the transparency procedure, the launch and rollout phase is marked by a series of strategic actions undertaken by the SMO, beginning with the pilot testing phase's insights being leveraged to refine platform functionalities. The subsequent opening of the registration process for data providers marks a pivotal step toward operational readiness, ensuring that all technical and legal frameworks are in place to support a smooth integration of stakeholders into the platform.

The culmination of this phase is the full-scale launch, a significant milestone where the platform is made accessible to the public, marking the transition of the West African electricity market toward enhanced transparency and efficiency. Alongside, comprehensive training sessions for all market participants and regulatory bodies are executed, ensuring a well-informed user base capable of leveraging the platform's capabilities to foster a more transparent, efficient, and competitive electricity market in West Africa.

### **Pilot Testing**

- **Selection of Participants:** The SMO, in consultation with ERERA, should carefully select a diverse group of stakeholders for pilot testing, including data providers (such as generation companies, and transmission operators) and end-users (regulators, market analysts, and consumers). The goal is to have a comprehensive range of participants to test the platform's various functionalities and its ability to meet different stakeholder needs.
- **Conducting the Pilot:** The SMO should launch the pilot testing phase, allowing selected participants to use the platform in a controlled environment. The SMO should focus on testing

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<sup>33</sup> A similar approach was utilized by the EU for the population of the ENTSO-E transparency platform.

<sup>4</sup> “Not available” or N/A should be used in cases when data is not present in a country, for example if a country does not yet have a day-ahead market, the data fields related to such a market should be entered as N/A. “Not entered” or N/E should be used (by platform operator, SMO) when data, which might or might not be available, is not entered by the data provider.

critical functionalities such as data submission, retrieval, visualization, and user access controls. The SMO should ensure the pilot covers all aspects of the platform, from technical performance to user experience.

- **Feedback Collection and Analysis:** The SMO should collect detailed feedback from pilot participants by gathering insights into the platform's usability, performance, and any issues encountered. It should analyze this feedback to identify common themes and areas for improvement. Based on the feedback collected, the SMO should make necessary adjustments to the platform. This might involve fixing bugs, enhancing user interfaces, optimizing performance, or adding requested features. It is crucial to communicate back to pilot participants how their feedback has been used to improve the platform, reinforcing the collaborative nature of the project.

### Data Provider Registration

- **Opening Registration:** The SMO should officially open the registration process for all data providers. ERERA and the SMO should cooperate to communicate the process, requirements, and timelines to data providers through various channels such as email, webinars, and the platform's website.

### Full-scale Launch

- **Official Launch Event:** The SMO should organize an official launch event, possibly in conjunction with an ERERA Forum, a major conference or as a standalone virtual event. The SMO should use this opportunity to highlight the platform's features, demonstrate its value to the electricity market, and highlight the collaborative effort involved in its development.
- **Public Access:** The SMO should open the platform for public access, allowing all stakeholders to begin submitting and accessing data. It should ensure that comprehensive user guides and support resources are readily available to assist new users in navigating the platform.

## V. Monitoring and Compliance

A monitoring and compliance plan should be followed with the initial roll out of the REM Transparency Platform. It involves rigorous monitoring for compliance, active collection of stakeholder feedback, and comprehensive report generation on market development. Each entity—ERERA, the SMO, and NRAs—plays a pivotal role in maintaining the effectiveness and integrity of the REM Transparency Platform.

### Organizational surveillance:

- **ERERA** should oversee the overall compliance framework, ensuring it aligns with regional goals and legal standards. ERERA should coordinate with NRAs to harmonize compliance monitoring efforts across jurisdictions, ensuring consistency in enforcement and corrective actions.
- **The SMO** should implement and manage the day-to-day operations of the compliance monitoring protocols, utilizing automated systems and manual reviews to assess adherence to transparency procedures. The SMO should develop a compliance dashboard for real-time tracking of data submission standards and issue alerts for non-compliance.
- **NRAs** should conduct national-level audits of data providers to verify adherence to platform requirements and transparency procedures. NRAs should also enforce compliance within their jurisdictions, applying corrective actions and penalties as outlined by ERERA's framework.

**Annual Transparency Workshops:** To foster an open dialogue and collaborative environment, the SMO should take the lead in organizing annual workshops. These workshops should focus on

gathering and discussing comprehensive feedback from platform users, identifying challenges, and brainstorming potential enhancements.

**Transparency Procedure Implementation Group:** To ensure the effectiveness and adherence to the newly implemented transparency procedures, it is imperative to establish a Transparency Implementation Group. The composition of the ad-hoc monitoring group should include dedicated human resources from the SMO, ERERA, and the NRAs, to be coordinated by the SMO. This diverse team composition will leverage a wide range of expertise and insights, crucial for the comprehensive monitoring of transparency practices across the region.

**Incentivizing Data Providers for Registration and Data Entry:** To ensure high levels of engagement and compliance, a range of incentives can be strategically implemented. These incentives are designed to not only encourage registration and diligent data entry but also to foster a culture of continuous improvement and transparency among all market participants.

- **Subsidies and Grants:** To alleviate the financial burden associated with upgrading technology and systems for effective data provision, grants specifically earmarked for these purposes can be targeted.
- **Setting Transparency Benchmarks:** ERERA should implement a benchmarking system where data providers' performances are periodically evaluated against the REM Transparency Procedure. Providers who meet or exceed these benchmarks could be publicly recognized and rewarded. Such benchmarks can be tailored to various aspects of data provision such as timeliness, accuracy, and comprehensiveness of data submitted. Within this setting, ERERA or the SMO can implement a certification program that acknowledges organizations that achieve and maintain high standards in transparency. This certification could enhance the recipient's market reputation and consumer trust. Also, the SMO or ERERA can annually recognize and reward entities that demonstrate exemplary compliance and innovation in transparency with 'Excellence in Transparency' awards.
- **IT and Technical Support:** The SMO should offer comprehensive technical support, including assistance with software and hardware upgrades necessary for compliance with transparency standards.
- **Training and Capacity Building:** The SMO should conduct regular training sessions and workshops to enhance the capabilities of data providers in handling data accurately and efficiently.
- **Reduced Reporting Burdens:** NRAs and ERERA should consider offering a reduced frequency of reporting or simplified reporting requirements as a reward for proven track records in compliance.

**Data Quality Checks:** To guarantee the integrity and reliability of the information on the REM Transparency Platform, it is essential for the SMO to implement rigorous data quality control measures. Among these measures, employing outlier detection techniques stands out as a simple yet critical tool for identifying and addressing anomalies within the dataset. Such methodologies will enable the SMO to systematically scrutinize the data for any irregularities or discrepancies that deviate from expected patterns, ensuring that only accurate and verified data is presented on the platform.

## VI. Conclusion

Through the structured phases of preparation and planning, development, and testing, launch and rollout, and monitoring and compliance, this plan lays out a comprehensive roadmap for ERERA, the SMO, and NRAs to collaboratively work toward enhancing market transparency. The meticulous execution of each phase, from the initial groundwork and stakeholder engagement to the technological development, pilot testing, and eventual platform launch, underscores the commitment to fostering an environment where data is accessible, and market operations are transparent. The emphasis on

stakeholder training and continuous feedback loops ensures that the platform remains responsive to the needs of the market and its participants.

Moreover, the plan's focus on compliance monitoring and the harmonization of efforts across jurisdictions highlights a proactive approach to maintaining the integrity of the market and ensuring adherence to established procedures and standards. The annual transparency workshops further establish a culture of continuous improvement and stakeholder involvement, which is crucial for the dynamic and evolving energy sector.

Finally, it is imperative to acknowledge that the diverse readiness levels of countries are a crucial factor in the implementation phase. The strategy must be tailored to accommodate these differences, ensuring that each country's unique position and capabilities are considered. By adapting the implementation timeline and requirements to the specific readiness levels of each country, the implementation plan pave the way for a more unified and successful adoption of the transparency procedures, ultimately contributing to the overarching goal of a transparent, efficient, and collaborative regional electricity market.

In summary, this implementation plan not only charts a path toward achieving a significant milestone in the regional electricity market development but also sets the foundation for a future where transparency drives market efficiency, encourages investment, and supports the sustainable growth of the West African energy sector. The collaboration and dedication of all involved parties will be paramount in realizing the vision of an integrated, transparent, and robust regional electricity market.

## **Annex I: Questionnaire to Draft Action/Implementation Plan for the Development of the Transparency Platform for ERERA**

This questionnaire aims to gather information to develop a comprehensive action/implementation plan to establish the regional electricity market transparency platform. The questionnaire is very compressive by design to be able to take a broader picture and it includes detailed inquiries which may not be relevant to all ECOWAS members.

Also to clarify, the gaps in current data availability does not constitute an obstacle to establish the REM Transparency Platform as it is envisaged that data will be populated as it becomes available, and it is already expected that some/most fields will not be filled in early years of implementation (similar to the European Union European Network of Transmission System Operators [ENTSO-E] platform's implementation in early years and even today). The objective is to ensure continuous improvement and establish and implement consistent regional reporting standards for transparency over time.

Finally, even though the questionnaire is targeted at the national regulatory authorities, most questions require input from the system operators, thus it is preferred, if possible, for the regulators to cooperate with the system operators in completing the questionnaire.

Responding entity: [Click or tap here to enter text.](#)

Date: [Click or tap to enter a date.](#)

Please answer the following questions to the best of your ability.

### **I. Framework Questions**

#### **I. Current Data Availability:**

- a. What types of electricity market data are currently collected and maintained by your authority? To answer this question, please refer to the data availability table in Annex I to see the categories.  
[Click or tap here to enter text.](#)
- b. How frequently is this data updated, and what is the level of detail provided? What tools (e.g., software, database, excel, emails, etc.) are used to collect such data?  
[Click or tap here to enter text.](#)
- c. Do you publish the collected data? Do you have periodic reports and websites that publish electricity sector data? If yes, can you please provide the relevant links?  
[Click or tap here to enter text.](#)
- d. Are there existing regulations and guidelines regarding data disclosure, market reporting, and transparency?  
[Click or tap here to enter text.](#)
- e. Do you check the consistency of data? Do you have any measures, manuals, or procedures in this regard?  
[Click or tap here to enter text.](#)
- f. Do you provide electricity data for other international organizations periodically? If yes, can please elaborate type, frequency, etc.?

[Click or tap here to enter text.](#)

## **2. Organizational Capacity:**

- a. Please describe the existing organizational structure and capacity of your authority in managing and disseminating electricity market data.  
[Click or tap here to enter text.](#)
- b. What is the level of human resource capacity within data provider organizations (i.e., transmission operators, power exchanges, balancing market operators) for the collection and submission of data to the transparency platform? Would these entities be able to arrange dedicated personnel/staff responsible for data entry, verification, and compliance with the REM Transparency Procedure?  
[Click or tap here to enter text.](#)
- c. What challenges, if any, do data owners, data providers or regulatory authorities currently face in ensuring transparency and data availability?  
[Click or tap here to enter text.](#)
- d. Will you need specific training programs to enhance their skills in data collection, validation, and platform submission?  
[Click or tap here to enter text.](#)

## **3. Issues for the Adoption of the regional Transparency Procedure**

- a. Are there any specific legal or regulatory considerations that need to be considered in the creation of the transparency platform?  
[Click or tap here to enter text.](#)
- b. What are the potential risks and challenges associated with developing and implementing the transparency platform? How can these risks be managed or mitigated?  
[Click or tap here to enter text.](#)
- c. Which timetable would suit you to apply the REM Transparency Procedure? Would you foresee a gradual application? Please elaborate.  
[Click or tap here to enter text.](#)

## **II. Questions on market maturity and transparency**

### **I. Load, Generation, and Transmission**

- a. What is the rate of electrification in your country?  
[Click or tap here to enter text.](#)
- b. What methodologies are currently employed for generating day-ahead load forecasts in your electricity market?  
[Click or tap here to enter text.](#)
- c. Do you have any specific concerns, particular to your country, which affect the accuracy of load forecasts?  
[Click or tap here to enter text.](#)

- d. What are the percentages of technical and non-technical losses at the transmission and distribution levels?  
[Click or tap here to enter text.](#)
- e. Are there consumers in your country who can be labelled as major consumers with consumption patterns having a dramatic impact on the load (e.g., large industry or mining consumption)?  
[Click or tap here to enter text.](#)
- f. How frequently does load shedding occur, and what is the typical duration of load shedding events? How many hours in previous years did you have load shedding? Do you have an estimate for energy not served (ENS) for these hours?  
[Click or tap here to enter text.](#)
- g. Do you have a Supervisory Control and Data Acquisition (SCADA) system? What is the process for accessing and utilizing data retrieved from SCADA?  
[Click or tap here to enter text.](#)
- h. How are projected changes to the transmission network planned and coordinated within the electricity market?  
[Click or tap here to enter text.](#)
- i. Is there any congestion in your country? If so, what are the primary causes of congestion in your country's electricity transmission system?  
[Click or tap here to enter text.](#)
- j. Is there congestion that extends across borders? If so, how is cross-border congestion managed?  
[Click or tap here to enter text.](#)
- k. Are there medium- to long-term (three to five years) electricity generation and demand forecasts in place, and what methodologies are typically employed?  
[Click or tap here to enter text.](#)

## **2. Balancing, Bilateral Transactions, and the Market**

- a. Could you provide an overview of the current framework for balancing services in your country's electricity market?  
[Click or tap here to enter text.](#)
- b. How transparent is the process of data disclosure related to balancing services? Is data on imbalances and balancing actions made available to market participants?  
[Click or tap here to enter text.](#)
- c. To what extent is there coordination or collaboration with neighboring countries for cross-border balancing services?  
[Click or tap here to enter text.](#)
- d. Are there mechanisms in place to provide transparency in the bilateral markets?  
[Click or tap here to enter text.](#)

- e. How is the need for balancing reserves forecasted and integrated into your overall system planning?  
[Click or tap here to enter text.](#)

### **III. Feedback and Comments**

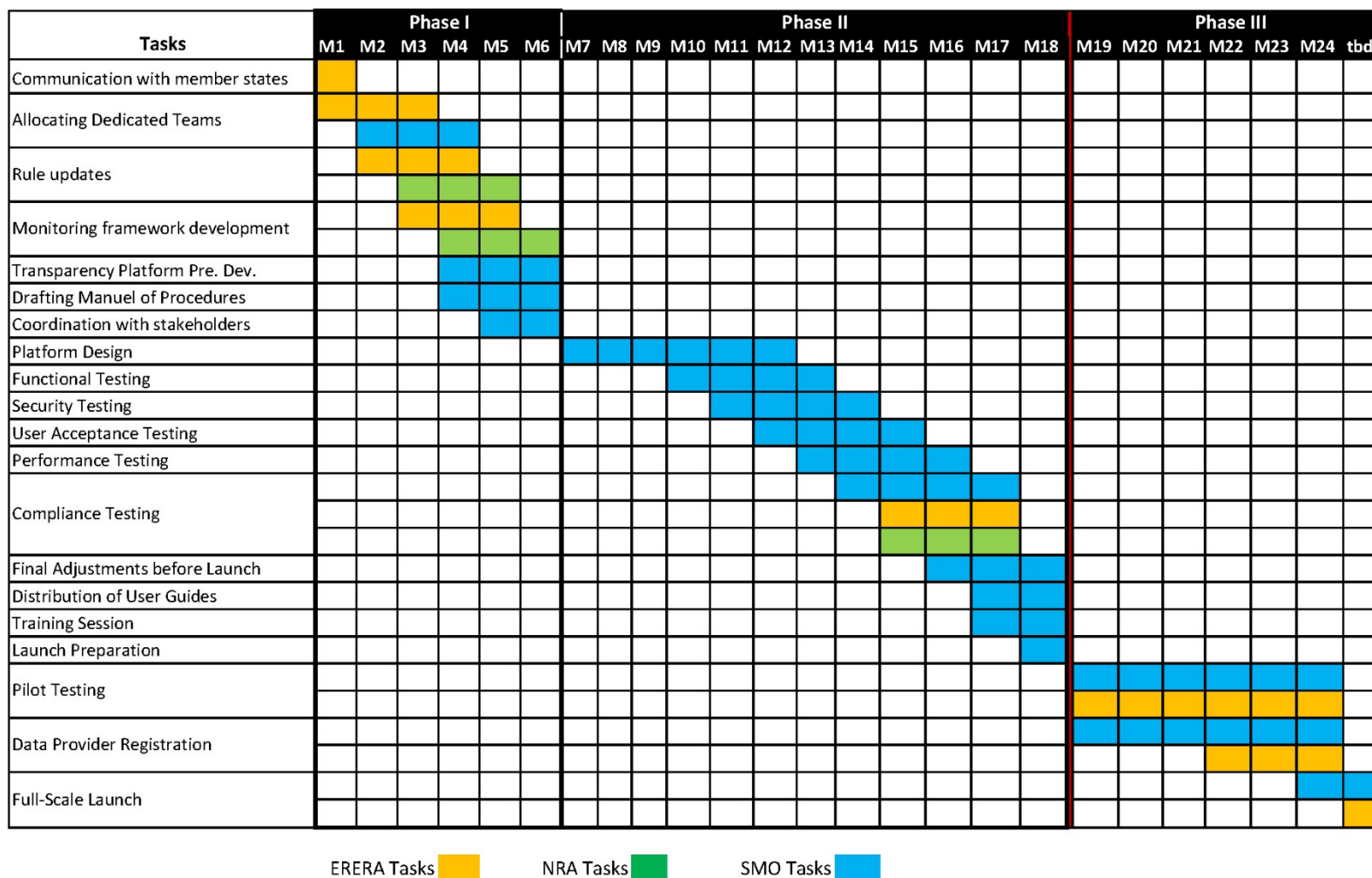
- a. Please provide any additional comments or insights regarding data availability and transparency.  
[Click or tap here to enter text.](#)

### Data Availability Table

VII. Data		Is the data Available? (Y/N)	Who owns or produces the data?	Comments
Load	Total Load			
	Load Forecast			
	Unavailability of Consumption Units	Planned		
		Actual		
Generation	Capacity per resource type	Commissioning/ Decommissioning		
		Licensing/ Permit/ Approval		
		Planned changes/ Unavailability		
		Actual changes/ Unavailability		
	Generation Estimate			
	Hydro Filling Rates			
	Unavailability/Insufficiency of Resources			
	Actual generation output			
Transmission	Infrastructure	Decision on Expansion/Dismantling of Assets		
		Realization on Expansion/Dismantling of Assets		

		Decision on Unavailability of Int.			
		Realization on Unavailability of Int.			
	Cross-Broder Capacity Flow	Offered Net Transfer CB Capacity			
		Available Net Transfer CB Capacity			
		Cross-Border Physical Flow			
	Congestion				
Balancing	Rules and Methodologies				
	Balancing Reserves				
	Procured Balancing Reserves				
	Activated Balancing Energy				
Market	Day Ahead Market Clearing Prices				
	Day Ahead Market Volumes				
	Intra-Day Market Volumes				

## Annex 2: Gantt Chart



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