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Table of Contents

1. Introduction

This Mission consists in conducting studies to improve the current regional electricity trading arrangements and prepare the market for wholesale competition. The regional regulatory studies started during summer 2018 by visiting the ECOWAS countries for consultations with the major stakeholders of the electricity sector, collecting the necessary information on the existing rules and practices of the electricity sector operation and regulation, thus aiming at establishing an assessment of the current power situation in each of the countries.

From December 2018 to May 2019, ERERA with EU support has organized three meetings as follows:

- 1st Meeting in Accra – Ghana, 10-11 December 2018, gathering national experts representing the Energy Ministries, the Regulators, the Operators of the ECOWAS member States, Sub-regional Organizations (OMVS, OMVG, CLSG and CEB) and non-ECOWAS countries (Mauritania). This meeting was dedicated to capacity building on the concepts and principles outlined in the draft rules for access to national and regional transmission grid, and the outcomes of the proposal for synergy with the sub-regional organizations and non-ECOWAS countries. The main objective of this meeting was to constitute a common basis of understanding of the topics addressed.
- 2nd Meeting in Accra – Ghana, 25-26 February 2019, gathering the national experts representing the Energy Ministries, the Regulators, the Sub-regional organizations and Mauritania. This meeting was dedicated to presentation, discussion and collection of national positions on: i) the diagnosis report and the review of the of ECOWAS Directive C/DIR.1/06/13 on the Organisation of Regional Electricity Market, ii) the clarification report on the role, rules and recommendations for the development of cooperation and the enhancing of synergies with Sub-regional organizations and non-ECOWAs countries, iii) the proposed draft rules for access and outcomes of the proposal for synergy with the sub-regional organization and non-ECOWAS countries. The main objective of this meeting was to initiate a continuous dialogue after the meeting with the Representatives of Energy Ministries and Regulators to achieve a consensus on the proposed rules for access, the term sheets of the model agreements for integration of the sub-regional organization and non-ECOWAS countries in the regional West African electricity market, including the proposed timelines for their implementation.
- 3rd Meeting in Abidjan – Côte d'Ivoire, 6-7 May 2019, gathering the experts representing the national operators of transmission networks and power system, the sub-regional organizations and Mauritania. The purpose of this meeting was to capture the reaction and comments, and also initiate a continuous dialogue with the national operators on issues and proposals raised during the 2nd Meeting, including the proposed draft rules for access and the identification of potential barriers / difficulties for their implementation.

Further to the above three meetings, a continuous dialogue was initiated with Working Groups members in order to allow the consideration of all comments, remarks and official inputs of the national Experts transmitted to ERERA and STANTEC before end of July 2019.

On that basis, the following draft texts of the Rules for Access to national and regional transmission networks were prepared.

The last and 4th meeting of the License & Legislation Working Group meeting took place on 7-8 November 2019 in Dakar, Senegal to validate the proposed Access Rules. This 4th meeting gathered all the national electricity stakeholders, specifically the national representatives of the Ministries of Energy, Regulators, Operators of transmission networks and power system Operators, and sub-regional organizations.

The aim of this participatory exercise is to achieve a full consensus among the representatives of the ECOWAS member States on the proposed Access Rules, before they are submitted for final review and adoption by the governing bodies of ECOWAS.

2. Context

Based on international and regional experience, there are certainly many factors that may affect the operation and development of the ECOWAS Regional Electricity Market. However, two fundamental factors usually determine the existence of such market:

- A need for an integrated network connecting all potential consumers and sufficient to accommodate the expected demand installed capacity;
- An institutional and regulatory framework for the market to operate in a sustainable manner.

Electricity is an ideal commodity to be traded using pool arrangements because of two of its unique characteristics. Firstly, , with current technology and associated cost, it is uneconomical to store electricity for future use, so supply must vary dynamically with changing demand and secondly, because one unit of electricity is indistinguishable from all other units, it is impossible to determine which generator produced which electricity at consumer level.

To make the regional market function effectively, national markets' legal and institutional frameworks should include (as a minimum requirement):

- A modern electricity Law and applicable secondary legislation (regulations, orders), that take into consideration the unbundling of the power sector, and the rights of third-party access to the grid without discrimination;
- A regulatory body (ideally independent) to regulate and control the national market and verify if access to grid right is properly implemented.

The harmonization between national legal systems (especially between Anglophone and Francophone) and regional level of regulation, the establishment of best practices, and the promotion of good regulatory governance across the region is very important. This harmonization is necessary to ensure effective and non-discriminatory third party access to the national and regional networks.

The harmonization of the organisation of national markets may start from relatively limited forms of competition in the market before introducing wider access to the grid. For example, the restructuring of wholesale power trading arrangements may progress from transactions within an integrated power utility to the entry of IPPs, then to opening access to power networks by large users, and eventually to bilateral trading between generators and distributors under competitive trading.

The harmonized organisation of the market in ECOWAS Member States requires a strong coordination, a strong political commitment by ECOWAS Member States and a close cooperation and collaboration between ERERA and other ECOWAS institutions.

Based on these rules and on the road maps and timeline discussed with ECOWAS Member States, the new Directive on harmonization of the organisation of national markets that shall be prepared will be based on a thorough review of the organization and evolution of State Members' national markets, and coordination with national authorities. It will define the conditions precedent for the further development of the ECOWAS regional market.

3. Principles on Access to the National Market

The ECOWAS Directive on the Organization of the Regional Electricity Market provided for a number of conditions pre-requisite that have to be met by member States for the effective operationalization of the regional electricity market. The pre-requisites include the following:

a. Access to national, sub-regional market/grid for eligible customers;
b. Accounting separation;
c. Open access to the regional network;
d. Enabling Terms and conditions of IPP licensing;
e. Establishment of national regulatory authority;
f. Adequate tariff and market surveillance powers of the regulators; and
g. Capacity building of the regulators.

The first pre-requisite on open access is predicated on the assumption that all the other pre-requisites have been met as third-party access to electricity is often a consequence of legal and institutional reforms towards putting in place an efficient electricity market governed by clear and transparent technical, commercial and legal frameworks, and regulated by an independent sector regulator.

Based on the feedback from the ERERA recent assessment tour to ECOWAS member states to determine the level of compliance with the Directives, following the initial assessment done in 2016, it has been established that the various member States remain at various degrees of compliance with the directives, except for Ghana and Nigeria that have fully complied.

The LLWG meeting held December 11-12, 2018 further revealed that the challenges of member States towards moving towards open access, is as many and different as there are countries even though several challenges are the same in most countries.

However, as the region works towards Phase 2 of the market development, which mandates open access to the regional grid, it is imperative that a minimum set of pre-requisites must be achieved by member States within timelines, set for each member State, based on their legal, financial and technical peculiarities, to give effect to the regional open access initiative. Individual countries will be encouraged and supported by ERERA to take the required critical steps towards achieving open access nationally.

The experience of both Nigeria and Ghana in the region (and indeed of other developing countries around the world) has shown that it typically takes a long time (over 10 years) to achieve the implementation of third-party access to the grid from the time the policy has been defined through legislative amendments, institutional reforms and development, and implementation by the regulator.

To this end therefore, third-party access to the national grid, while being guided by some basic agreed principles, should also be implemented based on the need to ensure that the related roadmap takes into cognizance the peculiarities and challenges of each individual county while ultimately working towards an open access framework that will seamlessly fit into the regional open access. Likewise, the regional open access rules must also take into cognizance the fact that while a minimum set of compliance with agreed participles must be implemented by member States, the regional access rules should also recognize that the ECOWAS Energy Protocol supports a gradual approach toward the development of the regional market. This is hinged on the fact that the differences between the level of the electric power sector development of member States means that the rate of the development of market reform in individual countries will also be different.

Based on the foregoing, therefore the underlying principles presented below are based on:

- The general principles required for third-party access to the grid;
- The current status of compliance with the Directives by member States;
- The establishing of a workable roadmap for achieving third party access to the grid nationally; and
- The establishing of a minimum compliance threshold to give effect to third party access to the regional grid.

3.1 A strong and sustained political commitment to liberalization and competition in the electricity sector at national level

The need for a strong and sustained political commitment to liberalization and competition in the electricity sector at a national level will typically be supported by a government policy document (Energy or Electricity Sector Policy), defining the intentions of government towards introducing third party access.

However, it is also important that the policy is supported by a roadmap that clearly sets a timeline for the achievement of the stated objectives because the absence of a roadmap typically means that the policy document will not always be translated into actionable plans and targets.

Recommendation:

For the ECOWAS member States, the current assessment shows that every country now has in place a policy supporting third-party access. The next step towards ensuring the implementation of the policy will involve the development of a roadmap by respective countries to provide targets and timelines towards open access. This principle should be of common application to all countries and can be clearly achieved in the short term (1-2years).

A robust stakeholder consultation will also be required at the national level to sensitize all stakeholders, discuss the challenges, and put in place a roadmap based on SMART targets.

Considering the natural tendency for Ministries, and or their Ministers to be reluctant to grant National Electricity Regulators the financial and operational autonomy required for effective regulation of both national and sub-regional electricity market, there is a need for ERERA to embark on region-wide sensitization of Governments or energy sector Ministries about the importance and numerous benefits of cross-border electricity activities. These benefits may include economies of scale, cheaper electricity for local customers, energy security, attraction of investment by IPPs who know that the cross-border capacity offers market for the energy yield of their power plants.

As part of this sensitization, ERERA would allay the fears of Governments and power sector Ministries that an independent regulator does not in any way usurp or erode their mandate or authority, but rather facilitates the effective implementation of power sector policies

Other benefits of the proposed sensitization activity include the creation of awareness amongst Governments and Sector Ministries that granting financial autonomy to the regulator to oversee effective cross-border electricity trading would yield dividends in the form of deferred investment, cheaper electricity for local consumers and more sustained energy security, which promotes accelerated socio-economic growth.

3.2 A national legislation that mandates open access, competition, and non-discriminatory access to the power grid

While the policy document gives the overall vision and objectives of the Governments towards third-party access, the enactment of primary legislation by member States will ensure that the policy is backed by the legal mandate to make the objectives achievable and enforceable. Visions and targets of national and sub-regional markets shall be clearly and unambiguously stated and shall reflect the best options of the affected countries. This would enable the relevant national, sub-regional and regional authorities to set out appropriate Rules to achieve such Visions and targets

Open Access requires that the enabling legislation provides for clauses that will support competition through opening up of the sector to other market participants other than the incumbent. The legislation will also provide for non-discriminatory access to the grid by generators, distributors and eligible customers.

In practice however, even when provisions are made for third-party access in national laws, such provisions are often supported by certain conditions precedent that will need to be met before the actual implementation of the provision. This is understandable as while in general, an efficient market should ultimately allow for non-discriminatory access to the grid, in practice, it is necessary to ensure that all the required building blocks for the implementation of the access rules are put in place to allow the workability and effectiveness of the market.

Typically, the Electricity Act should, amongst others, address the following key provisions toward open access:

- General Principles on sector unbundling and functional independence of the Transmission System Service Provider;
- Establishment of Independent Regulator;
- General Principles for Market Opening & transitional market models;
- General Principles on Open Access and authorized Market Participants;
- Guidelines on Declaration of Eligibility Criteria of Customers;
- General Principle on cross-border electricity trade;
- General Tariff Principles; and
- General Licensing Criteria for participation in the Electricity Market.

The ERERA country assessment report reveals that most member States, with exception of a few, have already enacted legislations supporting open access. The countries yet to pass the legislations already have draft Bills for approval by the parliament. Again, this principle should be considered as non-negotiable in terms of compliance by all member States as the regional market cannot in practice be operationalized if there is no law backing third-party access to the grid in each member State. The broad provisions of the Law will for now suffice to provide the legal backbone for open access.

Recommendation:

It is recommended that based on the strides so far made by member States in complying with this principle, a reasonable timeframe (3-5 years; with reference to the time taken by Ghana and Nigeria to achieve full compliance) is appropriate for other member States who are yet to comply, to complete the legal process of ensuring the enactment of the enabling laws or amendment of existing legislation.

3.3 National secondary legislation for an effective, competitive and non-discriminatory market

While the primary legislation by way of the Electricity Act provides the general legal framework that will support open access, it is often necessary to develop other secondary legislative instruments, typically by way of Regulations, Rules and Codes to give effect to specific provisions contained under the general legislation. In most countries, the Regulator is responsible for the elaboration of this secondary legislation, while in some cases, the Ministers in charge of power also have legal mandate to specify certain requirements.

Typically, with regards to open access, the secondary regulation will address the following issues:

- Regulation on Licensing;
- Regulation on Tariff Methodology;
- Regulation on Eligible Customers;
- Uniform System of Accounts Regulation;
- Regulation on Complaints Handling and Dispute Resolution;
- Grid Code (including Metering Code);
- Distribution Code; and
- Market Rules.
- Specific Technical Regulations for Variable Renewable Energy-based participants

These secondary regulations are required because ultimately, they will pave the way for the implementation of full third-party access to the national grid. However, in practice the introduction of each of these Regulations are often predicated on the stage of development of the national market and the necessity of moving from one stage of market development to the next. The maturity of the regulator is also critical as the regulator is expected to have the required capacity for developing and implementing the Regulations.

The current ERERA assessment report shows that there is a wide discrepancy with respect to the development and implementation of these various Regulations in different countries. While several newly set up Regulators are just beginning the process of developing the very basic Regulations, a few of the existing Regulators have developed at least half of them, with Nigeria and Ghana being the only countries that have developed the full suite of Regulations.

For open access towards the Regional Market, it is imperative that a few of these Regulations are put in place by member States in the short term while options for the development of the other Regulations will be determined on a case-by-case basis. The Regulation on Licensing is critical as the ERERA Market Rules provide for the licensing of market participants to be done primarily at the national level before being registered as Market Participants at the regional level.

Again, the Regulation on Tariff Methodology as well as its implementation is considered essential for the implementation of open access in the short term. This is very important as the ERERA Regional Transmission pricing methodology is hinged on a model that provides for the separation of cost along each segment since it is only the transmission costs that will be required in computing relevant costs of assets used for accessing or wheeling power on the regional grid. A clear and transparent tariff methodology based on strict power sector organizational accounts separation at the national levels

will therefore be necessary to provide efficient price signals both at the national and regional electricity market and is often one of the early and cardinal tasks of the regulator.

The Grid code provides performance standards and technical parameters for connection to the grid and ensures safety, reliability and quality of service. It is expected that once the market has been thrown open to multiple participants, a grid code becomes very necessary to ensure that specified performance standards and technical parameters are complied with and sanctions for non-compliance are provided. The safety and reliability of the regional grid is essential to the effectiveness of the regional electricity market so it is desirable that steps are taken at the national level to develop national grid codes that will protect open access and constitute solid basis for a strong operational framework to secure the regional market.

Recommendations:

It is recommended that while in principle all member States will be encouraged to develop the required Regulations in the short to medium term, some of these Regulations including the regulation on Licensing, Tariff Methodology and the Grid Code should be required to be developed by all member states in the short term (1-2 Years).

The development of the other Regulations will be subject to the timelines provided in the national electric power sector development roadmap for each country with the Regulation on Eligible Customers coming typically after all the other Regulations have been effected.

It is further recommended that:

- Countries that have already established most of the Regulations should work towards putting in place the few Regulations left in the short term (1-2 years);
- Countries that have an average compliance level can work towards full compliance in the medium term (3-5 years).
- Countries just beginning the process may require a longer time frame (over 5 years) to comply. This will ensure a realistic timeframe for compliance because examples from Ghana and Nigeria show an over 10 years' market transition implementation period from the enactment of the enabling Act to Declaration of Eligibility.

3.4 National legal or functional unbundling introducing a competitive wholesale market component

In order to prevent abuse of monopoly powers and promote competition, a market structure at national level should:

- Support ownership separation (legal unbundling) or, at a minimum, accounting and functional unbundling of transmission and distribution facilities from generation;
- Provide for a competitive wholesale market component;
- Guarantee independence of Transmission Service Provider; and
- Stipulate conditions for cross-border electricity trading.

Typically, it is expected that both the Electricity Policy as well as the Electricity Act in each country will provide a general guideline and make legislative provisions to support the required institutional reforms that will support open access. The development of transitional market models for promoting

open access and third party non-discriminatory access to the transmission network involves a number of different approaches. Typically, this takes the form of the vertical unbundling of the incumbent company into generation, transmission and distribution companies.

The current ERERA assessment report revealed that different variants of unbundling have been implemented across the region with some countries pursuing a partial unbundling, Generation & Transmission as one entity and Distribution standing alone. Some others have also followed the route of vertical and horizontal unbundling allowing the formation of multiple generation companies as well as multiple distribution companies with the Transmission company standing alone as a monopoly. The current assessment report also revealed that most utilities still operate as vertically integrated utilities.

While there are no hard and fast rules on a general restructuring model to be pursued across board, the key principle which needs to be emphasised as this is key to a competitive and transparent electricity market, is the need for a clear separation of cost irrespective of whether a legal or functional separation has been effected. Functional and Cost separation is even more important where the utility remains a vertically integrated utility as it is possible to allow competition without necessarily structurally unbundling the incumbent utility. The principle of functional unbundling will not only ensure that the Transmission Sector is empowered to grant non-discriminatory access to all market participants, but also ensure there are no cross-subsidies across board and provides a level playing ground for all participants. It is also critical for tariff determination to allow for only those costs relevant for the operation of each market segment to be covered by that segment.

Recommendations:

The form of institutional restructuring will depend largely on the circumstances of each country taking into cognizance such factors as market size, market segmentation, resources capacity as well as developmental policies. For the effectiveness of both the national and regional markets, a key principle that has to be adopted across board in the short term would be the requirement for Accounts Separation and Cost unbundling. The ERERA assessment report discloses that a few countries have already started the process even though a key challenge is the capacity of the utilities and regulators to implement this principle. Therefore, for this principle to be achieved in the short to medium term across all member states, capacity building support will need to be provided to allow both the utilities and regulators develop the skill sets required for the effective implementation.

With regards to the unbundling of the utilities, again, this must be pursued on a country to county basis based on the overriding principle that even where a legal unbundling is not desired, every member State should realistically work towards a functional unbundling. The time frame again will depend on the current level of development of each national market as well as the market structure envisaged in the National Electricity Policy and the Electricity Act. The overall guiding principle should be a proactive approach towards implementing the respective market structure adopted on a national level within the short to medium term (2-5 years).

3.5 A national professionally strong, autonomous, and credible regulatory body

The establishment of a regulator that is organizationally, financially and operationally independent is fundamental towards implementing an open access framework. It is an essential task of the regulator to put in place the secondary legislative framework that will guide the development of the electricity market. The regulator is also given the responsibility of market monitoring and ensuring compliance with all approved national and regional regulations, codes and standards.

Organizational Independence is concerned with the legal set up of the regulatory authority, which should ensure its autonomy and give security of tenure to the regulatory board through clear and transparent appointment and removal processes, insulated from political interference.

Financial independence is ensured through the enactment of relevant provisions in the law specifying that the regulators shall have adequate and sustainable sources of funding for their activities primarily from regulatory levies on electricity tariffs applied to users and license fees imposed on licensees/utilities, and or royalties charged on IPPs.

Operational Independence means that the regulator is empowered to conduct its affairs at an "arm's length" from all stakeholders and perform its duties in an independent and impartial manner. This includes ensuring autonomy with regards to the setting of tariffs, market monitoring, enforcement and compliance, all critical to implementing open access.

The Feedback from the recent missions to countries shows that while the regulatory agencies have been set up as independent regulators, most of them are neither financially nor operationally independent. Generally, none of the regulators for now have their budgetary needs fully covered by levies imposed on the licensees since most of the licensees/utilities are unable to pay in full or even at all.

There are also major challenges with operational independence as a number of the regulators still do not have full powers for tariff setting and market monitoring and are also handicapped as a result of inadequacy of knowledgeable staff to regulate the market.

While financial independence will depend to a large extent on the number of private and public sector entities that operate efficiently within each national or regional market with ability to pay the imposed levies, operational independence is easier to achieve in the shorter term as this largely depends on the provisions of the enabling legislation and the enforcement of the legislation. For open access to be effective, the Regulator must have the powers to define the tariff methodology and approve appropriate tariffs. In addition, competition and the need to ensure non-discriminatory access to the grid come with open access. This therefore means that the regulator should also have market monitoring powers.

Recommendations:

Legislation setting up independent regulators should provide for organizational, financial and operational independence of the regulator. Since most of the legislation in member States already have these provisions, the few countries that require an amendment to the enabling legislation can have the amendment affected within the short term (1-2 years).

The implementation of the provisions especially with regard to financial independence and market monitoring will, to some extent, depend on the level of development of each national market. In the absence of viable utilities to provide financial autonomy for the regulator, it may be necessary to adopt in principle that national government will provide adequate funding for the effective operation of the regulator pending such a time that the market becomes sufficiently buoyant to fully fund the regulator.

There will also be a need to develop a strategic approach towards building the capacity of regulators in the region in order to gain the skill sets required for the development and enforcement of all Regulations that will promote open access. ERERA can drive this initiative as part of the action plan toward the development of the regional market.

National regulators should be given the necessary support by ERERA and other development partners to develop: (i) Tariff Setting capabilities through training programmes and twinning arrangements with the more mature regulators in the region (e.g. Nigeria); and (ii) Accounts Separation (the Ivory Coast Account Separation model and the Uniform System of Accounts Regulation in Nigeria may be used as basis to start the processes).

3.6 National independent and efficient transmission system operator(s)

Electricity Transmission System Operators (TSOs) are responsible for the reliable transmission of power from generation plants to regional or local electricity distribution operators (DSOs) by way of a high voltage electrical grid. Since TSOs are usually a natural monopoly, often wholly or partly owned by state governments, they are typically subject to regulation.

TSOs provide grid access to the electricity market players (i.e. generating companies, traders, suppliers, distributors and directly connected customers) according to non-discriminatory and transparent rules. The key roles of TSO include:

- Maintaining, operating, planning and extending, a robust and cost-efficient network;
- Ensuring that the grid always remains stable to safeguard the consumer's security of supply;
- Setting the minimum operational rules and obligations on network security and be able to forecast electricity demands for a medium-term period; and
- Informing governments about generation adequacy issues on mid-term basis and providing any information on any intended investments to the network, for both internal lines and cross-border interconnection to guarantee an optimum generation-consumption balancing.

The Independence of the TSO is therefore very critical in ensuring open access to all market participants both within the national and regional market. While it may not always be possible to have a TSO that is a legally independent entity, functional independence must be given to allow for a level and transparent playing field.

Recommendations:

TSOs shall be at least functionally independent and national legislations should mandate open access to the transmission network within the short term to medium term (2-5 years). TSOs are major regulated components of national and regional electricity markets. They shall thus be granted sufficient revenue from the use of their assets to guarantee a secure and sustainable power supply on the long range to all customers.

National grid code should be established for setting-up a solid, reliable and non-discriminatory operational framework.

Local Discos shall be granted the right to opt out of their local markets to enter into bilateral contracts with generators and wholesale retailers in other countries.

3.7 A cost reflective, efficient, and transparent transmission and distribution pricing

The Development of the regional electricity market will be supported by a transparent and cost-reflective tariff regime that will be developed and implemented by the Independent Regulators at

national level. A number of countries within the Region still have Tariff setting powers vested with the Minister instead of the Regulator. This makes it difficult to attract investment as well as to ensure recovery of costs required for an effective and efficient market.

It is therefore necessary that the tariff setting methodology is vested with the Regulators who have the skill set to develop the right tariff methodology to ensure transparency in cost as well as protect the interests of both the consumers and the investors.

Recommendations:

Full mandate for Tariff setting methodology (following stakeholder consultation process) must be given to all regulators without interference from the Government.

National TSOs shall be compensated for hosting cross-border energy flows on their networks by TSOs of the system from which cross-border energy flows originate, and by TSOs of the system where those flows end.

This will guide the utilities towards ensuring cost separation between generation, transmission and distribution especially for utilities that remain either fully or partially vertically integrated. A timeline of about 2-3 years should be given for the completion of this programme based on the capacity within each country.

A roadmap on ensuring that all countries migrate towards a cost-reflective tariff regime with the commencement of Phase 2 of the Market Development must be agreed upon since regional transmission cost is based on a cost-reflective tariff model. A timeline of about 3-5 years can be considered for this action to support a gradual approach and prevent rate shock.

3.8 A national transparent system planning process

Transmission system planning involves a host of complicated technical considerations related to power flow through an electric network and the dynamic behaviour of demand, equipment, systems, and control equipment.

Most of the transmission system planning required is due to a continuing growth of electric demand associated to a continuous search of generation cost optimisation for customer satisfaction. Even allowing for significant improvements in the efficiency of electric appliances and usage, a growing population and economy leads to increased demand for electric power. Increasing demand requires more transmission system capability, even if more transmission lines and substations are not built due to environmental issues. A large part of transmission planning in many cases involves determining how to increase the capacity of existing systems without adding new lines and rights of way. This is accomplished by upgrading transmission lines and transmission systems and leads to a severe curtailment of the security operating margins.

A strategic planning at regional level involves a tight coordination of all TSOs. The TSOs shall be committed to issue regularly Generation Adequacy Reports to identify the need of new generation means and the associated transmission reinforcements. The reports shall be submitted to Regulators and then to Governments for decision on the type of generation mean to develop as they are in charge of the Energy Policy.

A transmission system planning process that is transparent and open, including inputs from independent power producers, multiple buyers, demand responders, and other relevant stakeholders

is therefore paramount for the effectiveness and efficiency of both the national and regional electricity markets.

Recommendations:

All local Gencos, TSOs and Discos, which may transact business on the cross-border transmission network, shall be obliged to register with the Regional System and Market Operator (RSMO), and periodically submit their load profile, including weekly or day-ahead demand forecasts on firm basis. The only exception shall be as a result of a Force Majeure, or where safe network operation is only possible with curtailments. This is essential in helping the RSMO in its network congestion management role.

To promote region-wide cross-border transmission network integrity, the cross-border network operators shall ensure a safe and secure operation of the regional power system and, then, shall have the mandate to recommend specific investments within the local transmission networks of participating countries. ERERA shall ensure that all means for coordination and optimization of the necessary investments have been deployed. Sanctions should apply in the event of failure to comply.

Adequately, deterring penalties should also apply against local TSOs whose negligence cause faults that have region-wide implications.

3.9 A transparent exchange of information at national and regional level

To avoid abusive behaviour by some market participants, it is instructive that the RSMO and ERERA have access to real-time data that provides information on operational decisions made by supply undertakers, especially concerning capacities significant enough to cause distortions in the market as well as present potential congestion issues.

Regional exchanges require immediate attention toward transmission reliability performance and system reliability performance and market interactions. To ensure integrity of the cross-border network, all participating National TSOs shall grant access to the RSMO for real time data on frequency and voltage on the networks of National TSOs.

To increase the transparency of grid capacity calculation, TSOs shall send all agreements (including old agreements) and data generated for cross-border capacity calculation, in a timely and user-friendly manner to the RSMO.

Establishing a strong and relevant strategic planning implies setting up a strong information system at national and regional levels. The Information Systems should bring together a vast set of technical and economic data concerning the electricity sub-sector. Well designed, the national information system lays the foundation for a prospective analysis of demand and will set the basis of efficient real-time information of transmission capacity.

Such requirements, the nature, periodicity and quality of data exchanged shall be clearly defined and specified with a detailed description of the work processes and procedures for collection and analysis in the Regional Grid Code as well as in the national grid codes.

Recommendations:

Real-time information on transmission capacity requires the availability of a large set of data: (i) energy balances and, as far as possible, a consistent statistical series (ii) documented estimates of access / coverage / service rates by distinguishing between rural and urban areas; (iii) data on local

demands based on results of surveys carried out according to proven methodologies, or on estimates of specific consumption based on a thorough bibliographic analysis), and (iv) inventory of renewable energy projects including annual energy production records.

Experience shows that an information system is more viable if data providers are convinced of the good use that is made of it. Consequently, it is proposed to promote the creation of added value from the raw data collected in each member State.

It is recommended that the Grid Codes mandates that data regular updating should be carried out via two national focal points: a representative of the electricity company (ies), and a representative of the Ministry of Energy or the regulatory body. ERERA has already established a working group on Data Collection who can be utilized for this purpose. Modalities for the procedures of the necessary data collection should be proposed by ERERA and adopted after consultation with the ERERA working group.

The data collection should start at short time (1-2 years). The information system should be designed and implemented, and the focal points appointed also within a short time (1-2 years).

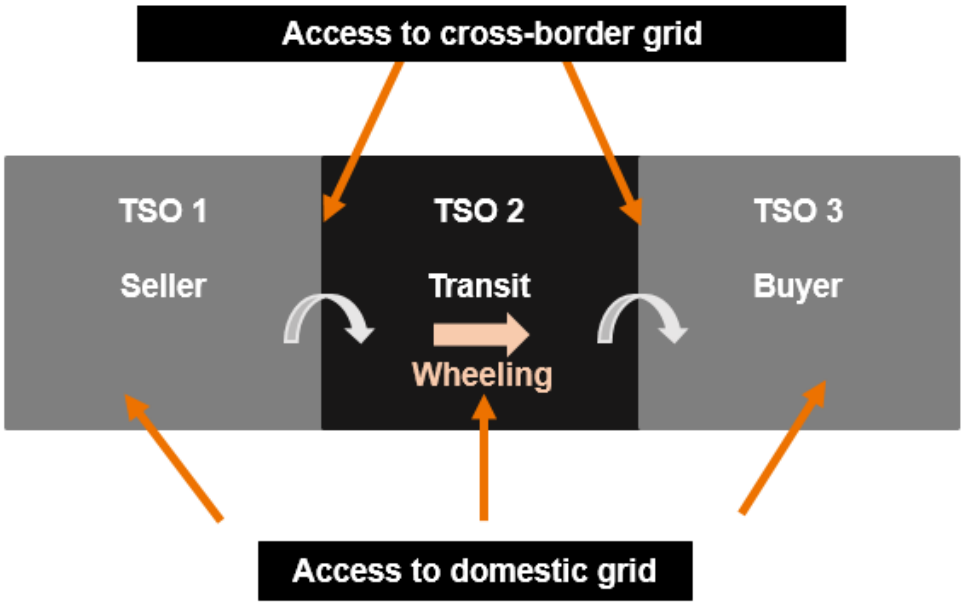
4. Principles on Access to the Regional Market

Electricity transmission is generally planned and operated in a coordinated manner, both within a "control area" (by the TSO) and between different "interconnected (synchronous) control areas" (through bi-/multi-lateral agreements or sub-regional organizations).

Cross-border electricity transmission projects can affect two contiguous jurisdictions, linking (i) the electricity systems in the two jurisdictions, or (ii) a generation plant in one jurisdiction with the electricity system in the other jurisdiction. It can also affect more than two jurisdictions, with the cross-border infrastructure connecting with the electricity systems in all jurisdictions involved, or affect more than two jurisdictions, with the cross-border infrastructure not connecting with the electricity systems in some of the jurisdictions involved. Different jurisdictions have different rules about which entities may own and develop transmission infrastructure, including interconnectors, and on the use of the infrastructure.

The figure below shows the multinational trading of electricity within the ECOWAS[1]:

[1] Economic Community of West African States.



ERERA has a mandate to monitor all agreements and procedures related to cross-border access and check if they are in line with the Regional Market Rules. ERERA's monitoring and surveillance mission includes preventing interconnectors from being "legally congested", although they are not physically congested. Thus, a procedure to assess the maximum capacity that could be made available to the market on a given border should be elaborated and clearly defined by the Regional Grid Code. New methods for allocating cross-border grid capacity must be established, and decisions made on how to allocate the capacity (i.e. by means of day-ahead, month-ahead and year-ahead allocation methods).

The ECOWAS electricity market is facing emerging unprecedented challenges as it should adapt to meet global decarbonisation targets while safeguarding security of supply and ensuring affordability. In this context, the timely and effective implementation of all rules and regulations establishing grid access, network codes and guidelines are an utmost priority.

Access to the regional market will largely be based on the achievement of some of the basic requirements for access at the national level.

For the ECOWAS Regional Market, the key Directives and Regulations have already been put in place even though effective implementation is yet to be achieved. Accordingly, key legal considerations that will have to be addressed in considering access rules to the regional market are presented below.

4.1 Regulations, Codes and Guidelines

Several Regulations, Codes and Guidelines are necessary for the efficient operationalization of the regional market. These include:

- Guideline for Registration of Market Participants;
- Development of Regional Grid Code;
- Regional Market Rules and Market Procedures;
- Regional Tariff Methodology;

- Development of Eligibility Criteria for Eligible Customers at national / regional level[2];
- Development of Model PPA for Eligible Customers at national / regional level[3].

A number of these Regulations are already in place. There is however the need to develop the regional grid code and guideline for registration of Market participants in the short term, the development of eligibility criteria for eligible customers at regional level is required for Phase 2 of the Market development and this can be supported by model PPAs for eligible customers.

It goes without saying that the current practices will have to evolve, because parallel flows will appear on the grid and the management of the flow balance will be carried out by specific operators who will be placed in a position of strength. Once problems go beyond a bilateral framework, it will be necessary to determine how they will be managed by several operators. Operators should therefore comply with common rules for the operation of the regional interconnected grid and its regulatory mechanisms. The importance of the Regional Grid Code will be increased with the development of interconnections, the growth of installed generation and the strengthening of national grids in the coming years.

Recommendations:

The principle of the Regional Grid Code (RGC) will be to define general operating rules, work process and procedures in the various fields which will have to be detailed and specified in the member States secondary legislation and regulation framework.

An RGC is to be developed by WAPP and approved by ERERA and should clearly specify all technical requirements of participating National TSOs, with subordinate instruments governing transactions of Gencos and Discos that eventually end up on the cross-border grid capacity. This Code will, however, not replace National Grid Codes for non-cross-border electricity transactions, but complement them.

4.2 Enabling Regional Market Structure

The requirement for an enabling market structure, predicated on the establishment of legally or functionally independent bodies, is also a requirement for the sustainability of the regional market as well as the implementation of regional open access.

Phase 2 of the ECOWAS Market design stipulates the opening of the market at this stage for the participation of eligible customers as well as the creation of an Independent System and Market Operator for the Regional Market. At the current stage of Market Development (Phase 1), the role of the System and Market Operator is handled by the WAPP Information Coordination Centre (ICC).

The current structure of WAPP as well as the various roles currently undertaken by WAPP today does not lend itself to a structure that is suited for a robust and effective regional market due primarily to the roles across both the transmission and generation segments that WAPP has gradually taken up in the past years. A number of the key issues under the current structure are stated below:

- The Articles of Agreement of WAPP defines WAPP as an international organisation that has public interest and Members recognize that the WAPP Organisation exists and operates for the benefit

[2] The declaration of eligibility at both national and regional levels and the need for regional eligibility criteria is open for discussion and shall be addressed by the LLWG.

[3] The need to differentiate Model PPA for eligible customers at national and regional levels is open for discussion and shall be addressed by the LLWG.

of the bulk electric transmission system and to ensure the reliability of the entire region's power supply.

- Membership of WAPP is voluntary and is open to any entity, public or private, which either (a) own/operate generation facilities of 20 MW or larger, and/or distribute and retail supply electricity (the "Transmission Using Members"); and/or (b) own/operate "major transmission facilities in the region", if such facilities are physically interconnected and have an impact on coordination of system operations in the West Africa region (the "Transmission Owning/Operating" Members).
- Based on these provisions, WAPP was initially involved in the facilitation of the development of transmission infrastructure aimed at integrating the regional grid which will serve as the backbone for the development of the regional electricity market.
- WAPP's role has since metamorphosed into facilitating the development of generation facilities including 3 regional IPPs being facilitated by WAPP.
- WAPP's involvement in generation projects has now deviated from the initial intention of WAPP being an organization to facilitate the regional electric transmission system and reliability of the system.
- A recent amendment to the WAPP Articles of Agreement has given the ICC the role of Regional System and Market Operator as envisaged in the Market design, but the current role of WAPP being involved in both transmission and generation was not contemplated by the Articles and is not the optimal structure towards the development of an electricity market that requires a clear separation between generation and transmission functions.

Recommendations:

Based on the foregoing, it is important that the current structure of WAPP is reviewed to enable the separation of the generation and transmission roles.

This may need a tight coordination at regional level of the national power development plans to plan and coordinate for the development of a strong and reliable regional grid in coordination with the national level in consideration of the proposed national generation candidates.

It is necessary to have a separate legislation clearly setting up the Regional System and Market Operator as an entity completely independent of WAPP as envisaged during Phase 2 of the development of the regional market.

4.3 Technical prerequisites

Interconnection of electric power infrastructure of states, regions and individual communities has, for the past few decades become a global trend due to its numerous benefits often termed as "system effects" that result in improving economic and technological efficiencies of the joint operation of the interconnected power systems.

To realise a significant proportion of the so-called "system effect" of a cross-border electric power interconnected system, the technical design, management and operating procedures of the national grids system of member States as well as of the entire cross-border transmission network have to comply with standardized technical rules considered as the industry best practices.

Resolution No. 010/ERERA/17 – Regional Electricity Market Procedures for the West African Power Pool (WAPP) does not provide a comprehensive set of technical rules to elicit compliance from TSOs

of participating countries with the potential to adequately guarantee the stability of the cross-border transmission network.

Currently TSOs of all member States have national transmission grids at capacities of 161 kV, 225 kV or 330kV or both. These are suitable for cross-border transmission connection.

The RGC shall establish the threshold and maximum capacity that may be transmitted on the Cross-border Grid Capacity (CBGC) to ensure a safe and secure operation of the network, and smooth operation of the Cross-border grid network.

To safeguard the integrity of the cross-border transmission network, participating national TSOs in member countries should procure, install and continually maintain adequate protective devices, on their national networks to reduce the risk of faults on national transmission networks feeding into the cross-border transmission network. TSOs also procure, install and continually maintain isolators on their national transmission networks to facilitate the isolation of national transmission networks from the remainder of the cross-border transmission network during maintenance, planned and unplanned outages.

Connection rules shall specify a minimum of technical, design and operational plant criteria to be complied with by current and prospective users of the cross-border network. These shall include the meter placement, compliance of levels of meter accuracy, accessibility and maintenance of the meters.

Every Market participant shall be required to comply fully with the WAPP Operational Manual with respects to the operations of the cross-border grid capacity.

Compliancy upgrading or expansion activities on any sections of National Transmission Networks which could potentially affect the smooth operation of the cross-border transmission network must be undertaken with adequate advance notice to the RSMO and ERERA.

In order to check compliancy, the RSMO shall request electric utilities in participating countries to submit Master Plans for given periods for all investments that would add to volumes of energy transported on the cross-border transmission network with varying time schedules; depending on the current levels of the infrastructural development of individual countries.

National Grid Operators of all participating countries must establish a roadmap to reconfigure, upgrade and modernize their national transmission and sub-transmission infrastructure for the specific purpose of synchronisation of technical standards, including power frequency and voltage on common region-wide benchmarks.

To ensure integrity of the cross-border network, all participating National TSOs shall grant access to the RSMO for real time data on frequency and voltage on the networks of National TSOs, including access to control room data.

Corrective measures should apply where a fault affecting the integrity of the cross-border transmission network has been traced to the failure of a national TSO to install and or maintain adequate protective and isolation devices on their national networks.

Day-ahead Market Gate Closure time should be defined in the Operational Planning Code (national and regional), and strictly enforced by the national Regulators and monitored by ERERA as part of strategies to prevent network congestion on the cross-border capacity during Phase 2 of the Market Development.

Due to the effects of high penetration of variable renewable energy technologies on grid stability and integrity, all national Gencos and Transcos shall, at the beginning of every year, submit to the RSMO, a plan of variable renewable energy technology projects that would be part of a generation mix from which cross-border demand would be met, and back-up or reserve sources of energy to cater for variable renewable sources. The renewable energy projects plan shall be updated at all operational planning stages (yearly, monthly, weekly and daily) for impact consideration on the operation of the national and regional transmission networks.

Recommendations:

- Based on the conviction that the aforementioned set of technical pre-requisites are essential for the smooth and efficient operation of the cross-border electricity transmission network within the WAPP Region, it is recommended that the rules are incorporated into the Grid Codes of member States, and the Regional Grid Code. This would then ensure that both at the national and regional levels, these rules are available to all stakeholders. It is expected that such an arrangement would facilitate compliance of the set of technical pre-requisites throughout the region.
- Establishment of a Long Term (10-25 Years) Regional Network Development Plan is encouraged with timelines proposed by WAPP and approved by ERERA. These timelines will be determined by the balance of the affected member States access to funds required for national network upgrade and the urgency required to ensure the safe and reliable operation of the cross-border transmission grid.
- The threshold capacity of bilateral transactions that may be granted access to the regional grid capacity shall be determined by ERERA, based on what ERERA considers appropriate for efficient management of the regional grid capacity, to prevent “littering the regional grid with unacceptably high numbers of very small threshold transactions”. However, ERERA’s Rules on threshold capacities shall respect lower thresholds set by national and sub-regional authorities when considering cross-border transactions for access to the regional grid, if there is sufficient capacity on the regional grid to conveniently accommodate such transactions.

4.4 Financial and tariff prerequisites

Beyond the respect of technical standards in the operation of interconnected networks, good technical and financial performances of operators remain fundamental for the viability and sustainability of exchanges.

The weaker member States are in a vicious circle, as poor performance leads to a precarious financial situation that does not allow access to the financial resources needed to recover the situation, which therefore continues to deteriorate.

Recommendations:

Cross border transmission tariffs will be in line with the Regional Transmission Pricing Methodology approved by ERERA and subject to approval by ERERA. Energy Pricing during Phase 1 of the Market will be as agreed by the parties to a bilateral cross-border PPA.

Proposed wheeling charges in transit countries shall be submitted to ERERA for approval.

Corrective measures should be applied where a fault affecting the integrity of the cross-border transmission network has been traced to the failure of national TSO to install and or maintain adequate protective and isolation devices on their national networks.

5. Proposed Rules and recommended options

Based on the foregoing, on international experience and regional reality, the underlying proposed Rules, recommended options and timelines presented below, at national and regional level, will enable an efficient regional market.

5.1 Recommended Rules for access to the National Market

Proposed Rule	Options/Timeline	Impacts
1. Elaborate an electricity sector policy document defining the intentions of government towards introducing third-party access to the grid	The sector policy document should: ▪ Provide a clear vision and targets of government on the electricity national and regional markets that shall reflect the best options including the organization of the electricity sub-sector, the ownership of the transmission network, the existence of a Transmission System Operator (TSO) or an Independent System Operator (ISO), etc. ▪ Highlight legislation amendments that are needed to implement the national and regional market vision (primary and secondary legislation). ▪ Introduce a mechanism for Stakeholder consultation at national level to enhance policy document and reduce implementation obstacles. ▪ Promote region-wide cross border transmission network integrity. ▪ Provide a clear Roadmap and implementation strategy with specific timeline depending on each country specific national circumstances. **Timeline : 1-2 years**	- A clear signal of the political will towards electrical sector reform and road map provides the tool for measuring effective implementation of the policy. - The sensitization (by ERERA) about the importance and numerous benefits of cross-border electricity activities. - The Policy Document shall be the basis for the appropriate primary and secondary legislations and shall enable their implementation.

Proposed Rule	Options/Timeline	Impacts
2. Enact legislation at national level that mandates open access to the grid.	Legislation at national level should: ▪ Provide guidelines on sector unbundling and ownership separation (legal unbundling) or, at a minimum, functional unbundling of transmission and distribution facilities from generation. ▪ Establish (independent) regulatory authority and define Regulatory authority mandate, organisation, functioning and funding. ▪ Provide general principles for competition and opening sector (gradually) to new market participants. ▪ Provide principles for open and non-discriminatory access to the grid by generators, Discos and eligible customers. ▪ Provide general principles on cross border electricity trade. ▪ Provide general principles on eligible customers. ▪ Define tariff principle on cross border electricity trade. ▪ Defined general tariff principles. ▪ Define general licensing criteria. **Timeline : 1-3 years**	- Provides for competition within the sector by encouraging private sector participation. - Encourages commercialization of state-owned utilities through enforcing business principles. - Encourages cross-border electricity trading to meet ECOWAS regional development objectives. - Establishment of independent regulator provides an incentive for investments into the sector. - Ensuring the development of cost- reflective tariffs will move the market towards sustainability and will boost the viability of utilities. - Eligibility criteria shall be defined and enforced to reflect country specific circumstances and in consideration of the economic and social national context. - Customers will benefit from a competitive and reliable electricity market. - Eligible (Bulk) customers have opportunity to choose suppliers based on reliability and price.

Proposed Rule	Options/Timeline	Impacts
3. Adopt additional secondary legislation to define eligible customers' criteria and prevent grid companies from abusing their natural monopoly position.	Secondary legislation should define: ▪ Licensing procedures and regulation. ▪ Tariff Methodology and regulation. ▪ Eligible Customers criteria and regulation. ▪ Rules for accounts separation and regulation. ▪ Complaints handling and dispute resolution regulation. ▪ National Grid Code (including metering code). ▪ National Distribution Code. ▪ National Market Rules. **Timeline: gradual compliance 2-7 years**	- A clear and transparent licensing regime with specified timelines will attract investment to the sector. - A robust tariff methodology is indispensable to send clear price signals and sustain the market for the benefit of customers. - Account separation provides a level playing field and prevents cross-subsidies and market distortion. - Assets inventories related to the accounting separation should be carefully planned, and resources should be allocated. - Grid Codes & Distribution Codes provides basis for technical reliability and adherence to performance standards.
4. Introduce a market structure at national level that supports activities separation (functional separation and cost separation).	The national market structure should support: ▪ Institutional restructuring of vertically integrated structures. ▪ Implementation of functional separation. ▪ Implementation of cost separation. **Timeline: gradual compliance: 2-5 years**	- Unbundling enables each sector to perform optimally and compete fairly with other private sector entities. - Cost unbundling provides transparency in cost and is critical to cost-reflective tariffs.

Proposed Rule	Options/Timeline	Impacts
5. Create an independent regulatory body at national level, committed to promoting and protecting competition.	The independent regulatory body should have the mandate, the means and the capacity to: ▪ Be organizationally independent; ▪ Be financially independent; ▪ Be operationally independent; ▪ Set/approve tariff methodology; ▪ Monitor the national market; ▪ Cooperate with ERERA in the investigation and resolution of cross-border disputes. **Timeline : 1-4 years**	- An independant regulator that is organizationally, financially and operationally independent serves as the pivot for the implementation of a viable electricity market. - Tariffs shall be cost-reflective and may include a regulatory levy to finance the regulators (levy on electricity tariffs) and/or charging royalties on IPPs. This solution will make the funding of Regulatory Authorities sustainable - With a competitive market, market monitoring to forestall abuse of monopoly status (transmission), collusion and other deviant market behaviour by market participants will protect customers and other stakeholders and ensure that the market does not collapse. - Independence of Regulators shall limit the risk of interference in tariff decision from trade unions and other national pressure groups.

Proposed Rule	Options/Timeline	Impacts
6. Create an independent and efficient TSO at national level, neutral to all sellers and buyers.	The TSO(s) should: ▪ Be independent, or functionally unbundled (or at least a roadmap for partial unbundling) in case of vertically integrated structures). ▪ Provide non-discriminatory access to the grid. ▪ Establish clear procedure for granting connection contract. Any refusal should be clearly and technically motivated. ▪ Follow national and regional Grid Code provisions (to be established). **Timeline: 2-5 years**	- The independence of TSO or ISO depending on the adopted organization for the national electricity market shall be guaranteed. - The ownership of the transmission assets shall be defined according to the adopted market organization (TSO or ISO). The functions of the TSO / ISO and their responsibilities shall be clearly defined
7. Define a transmission and distribution pricing at national level that is cost reflective, efficient, transparent, and separate from the cost of energy being transported.	The transmission and distribution pricing methodology should provide for: ▪ Separate costs for each market segment (generation, transmission and distribution); ▪ Regulatory levies; ▪ Fees for cross-border energy flows transit; ▪ Roadmap to migrate towards a cost-reflective tariff regime with the commencement of phase 2 of the Market Development. **Timeline: 2-5 years**	- Stakeholders must be consulted prior to setting out cost reflective tariff methodology. - Assurances of compensation, where cost reflective tariffs are not achieved, may be provided to Utilities/Operators.

Proposed Rule	Options/Timeline	Impacts
8. Implement a transparent and open strategic and operational transmission system planning process, including inputs from all relevant stakeholders.	The transmission system planning process should provide: ▪ Development and implementation of a national Grid Code. ▪ Obligation to all Gencos, TSOs and Discos, which may transact business on the cross-border transmission network, to register and provide periodically their load profile, including weekly or day-ahead demand forecast. ▪ Corrective measure to be applied against local TSOs whose negligence cause faults that have region-wide implications. **Timeline: 1-5 years**	- Transparent and real time information/data is essential for Operational Planning, in particular for determining the available transmission capacities on tie-lines - Necessity to keep on with the Strategic Planning function for further development of the national/regional transmission network and the identification of new generation capacities to avoid any energy shortage, bottlenecks and transmission constraints.
9. Provide transparent information on agreements and on real-time availability of transmission capacity.	The information system process at national level should: ▪ Include energy balances, estimates of access / coverage / service rates, data on local demand, inventory of RE projects. ▪ Include the nomination of two focal points at national level: electricity company/operators and Ministry or Regulator as members of ERERA Data Collection Working Group. **Timeline: 1-5 years**	- An efficient transparent and fair communication system shall be established and made accessible to the market participants and the key Stakeholders, including ERERA in charge of the surveillance of the regional market.

5.2 Recommended Rules for Access to the Regional Market

Proposed Rule	Options/Timeline	Impacts
10. Development of Regional Regulations, Codes and guidelines.	▪ Development of Regional Grid Code; ▪ Guideline on Eligibility threshold for Eligible Customer; ▪ Development of Model PPA for Eligible Customers. **Timeline: 1-2 years**	- Eligibility criteria for access to regional power trade are not required and shall be avoided. - Thresholds may be decided but shall be carefully considered to avoid any possible barrier for the development of the regional electricity market. - Thresholds for access to the cross-border grid capacity set by national and sub-regional bodies must be accepted by the Regional System/Market Operator.
11. Ensure compliance with Regional Market Structure.	▪ Review of WAPP structure to enable separation of generation and transmission roles and enhance planning and operations in line with evolving regional market ▪ Setting-up of an independent Regional System and Market Operator. **Timeline: 2-5 years**	- For long term Strategic Planning, the need has been expressed to establish a legal entity playing the role of Transmission System Planners, i.e. avoiding influence of non-TSO Stakeholders in the planning decision of the regional transmission network, generation being of high commercial thus competitive nature. - Therefore, there is a need for WAPP to evolve with the development of the regional market applying the principles of fair, transparent and equitable regional market. Possible restructuring of the WAPP to avoid any conflict of interest is questioned.

Proposed Rule	Options/Timeline	Impacts
12. Ensure compliance with Technical prerequisites.	▪ Safeguard of the integrity of the cross-border transmission network (through national TSOs). ▪ Connection rules. ▪ Compliance with the WAPP operational manual and the Regional Grid Code. ▪ Master Plans for given periods for all investments that would add to volumes of energy transported on the cross-border transmission network on various time horizons. ▪ Synchronisation of frequencies at points of connection. ▪ Roadmap to reconfigure, upgrade and modernize national transmission and sub-transmission infrastructure. ▪ National TSOs shall grant access to the RSMO for real time data on frequency, including access to control room data. ▪ Definition of day-ahead Market Gate Closure time. ▪ At the beginning of every year, RSMO shall receive a plan of variable renewable energy technology projects that would be part of national generation mix. ▪ Applying corrective measures where a fault affecting the integrity of the cross-border transmission network has been traced **Timeline: 2-5 years**	- With regard to the proposed Rules for Access, it becomes necessary to develop and adopt the Regional Grid Code as a legal reference for a harmonized operation of the regional transmission grid. - Full compliance between the national grid codes and the regional grid code is required.
13. Ensure compliance with Financial and tariff prerequisites.	▪ Cross-border transmission tariffs in line with ERERA tariffs methodology for regional transmission cost and tariff for the WAPP, adopted in August 18, 2015. **Timeline: 1-2 years**	- An efficient, transparent and cost-reflective pricing regime will ensure the viability and sustainability of both national and regional markets