

**PERSPECTIVES ON
REGULATING A
REGIONAL ELECTRICITY
MARKET: THE ECOWAS
EXPERIENCE**

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ABSTRACT

The paper will examine the rationale behind the establishment of the Economic Community of West Africa (ECOWAS) regional electricity market. It will discuss the peculiarities and differences within the various domestic electricity markets making up the West African Power Pool (WAPP) and how these impact on the operationalization of the regional Market.

It will also examine the various institutions as well as the legal and regulatory frameworks that have been put in place to ensure that the vision and objectives behind the establishment of the regional market are met.

The paper will look at the role of the ECOWAS Regional Electricity Regulatory Authority (ERERA) as regional regulator and discuss the various steps that has so far been taken to actualize the development of the regional market. It will also address the various challenges and lessons learnt by ERERA which will be useful to other regions proposing to set up similar regulatory bodies.

Finally, the paper will propose ways forward that will ensure that the objectives behind the establishment of the regional market are met and conclude with an opinion on how well the ECOWAS experiment on regional regulation has worked so far.

1. INTRODUCTION

The Economic Community of West African States (ECOWAS) is made up of fifteen countries of West Africa including Benin, Burkina Faso, Cabo Verde, Cote D'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. The regional group was established on May 28 1975 via the Lagos Treaty with a mandate of promoting economic integration in all fields of activities of the constituting countries.



West Africa as a region is blessed with enormous natural energy resources for electricity generation including vast oil and gas reserves to be found primarily in Nigeria, Cote D'Ivoire and Ghana; huge hydro resources in countries like Ghana, Nigeria, Mali, Niger and Guinea; coal reserves in Nigeria and uranium in Niger. In addition, other renewable energy sources like solar and wind abound in the region. Generally, Africa as a continent has the cumulative highest sunshine hours annually with more than 85% of the continent's landscape receiving a global solar horizontal irradiation at or over 2,000 kWh/(m² year).

In spite of these resources, ECOWAS as a region has continued to suffer huge deficit in electricity supply and has not being able to convert these huge potentials into actual electricity for the teeming populace as average electricity consumption per capita is about 118kWh¹. ECOWAS as a region has an average access to electricity rate of about 38%², one of the lowest in the world.

WAPP AT A GLANCE

Total Population of West Africa	348,631,936million	
Average Urban Electricity Access Rate	51.39%	
Average Rural Electricity Access Rate	13.48%	
Average Regional Electrification Rate	29.16%	
Average Cost of Electricity in WAPP (\$)		
Electricity Generation		
Total Installed Capacity Hydro/Thermal (GW)	5	16
Ratio of Hydro/Thermal Asset	22%	78%
Total Available Capacity Hydro/Thermal (GW)	3	9
Total Hydro Energy Generation (TWh)	17	
Total Thermal Energy Generation (TWh)	43	
Ration of Hydro/Thermal Energy Generation	27%	72%
Total Renewable Energy Available (GWh)	6	
Transmission Infrastructure		
HV Transmission System 330 kV - 60 kV of 800 Transmission Lines	15,000 km	
Number of Substations	600	
Number of Power Plants (Hydro & Thermal)	200	

Source: B. Adeyomo WAPP Presentation 2017

It was therefore in a bid to harness the huge energy resources within the region and translate the potential into actual energy in order to fast track the socio-economic development of the region that the ECOWAS Authority of Heads and State and Government, in 2003, approved the ECOWAS Energy Protocol.

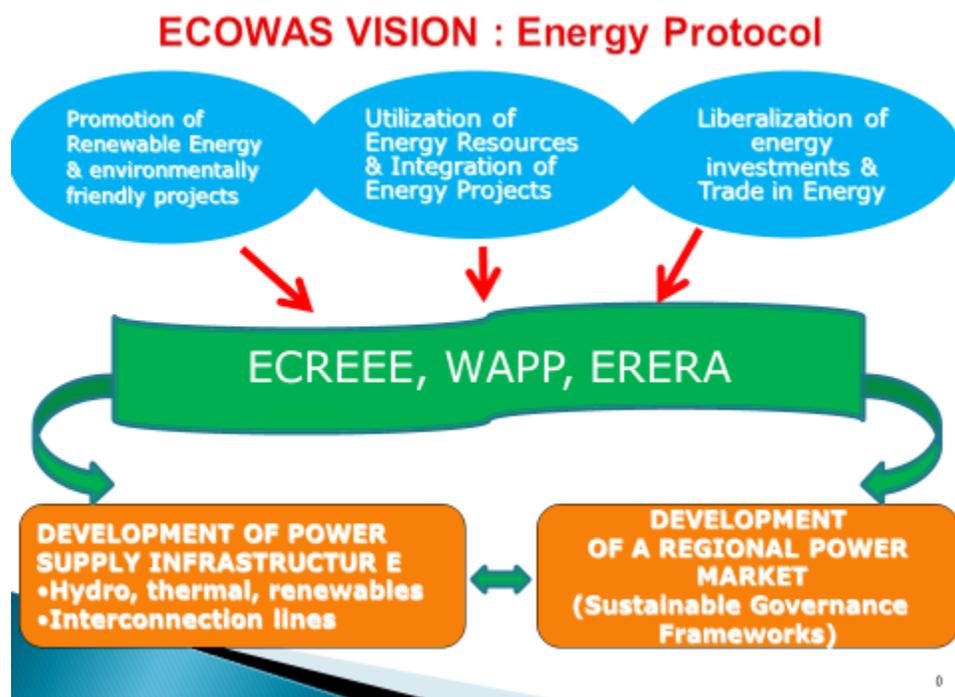
2. THE ECOWAS ENERGY PROTOCOL

The ECOWAS Energy Protocol of 31 January 2003 articulated a vision of establishing a framework for investment in energy and long-term energy trade within the region in order to support the following regional goals:

- Increased access to energy
- Stable, affordable, reliable & sustainable electricity supply
- Achieving the Millennium Development Goals
- Peace and security

The achievement of these goals is to be driven by balanced development of the diverse primary energy resources of the ECOWAS member States for the mutual benefit of the region leveraging on economy of scales.

Member States were also mandated to ensure long-term cooperation in the energy sector and unfettered access to energy transmission networks in order to facilitate and sustain increased cross-border electricity trading among Member States. The Protocol also provided for the creation of regional institutions and agencies required to achieve the set objectives including the creation of a regional electricity regulatory body.



3. ESTABLISHMENT OF REGIONAL BODIES FOR THE IMPLEMENTATION OF THE ENERGY PROTOCOL

In furtherance of the implementation of the Energy Protocol, four regional bodies have been established to drive the regional integrated energy programme. These are the West African Gas Pipeline Authority, the West African Power Pool, the ECOWAS Regional Electricity Regulatory Authority and the ECOWAS Centre for Renewable Energy and Energy Efficiency.

3.1 The West African Gas Pipeline Authority

The West African Gas Pipeline Authority was established in 2003 by virtue of the Treaty on the West Africa Gas Pipeline Project. The Project is responsible for the construction of a gas pipeline connecting the four West African countries of Nigeria, Benin, Togo and Ghana. The gas pipeline is for the transportation of natural gas from Nigeria to the other 3 countries for use in electricity generation and large industrial projects. The project was completed in 2008 and supplies gas to electricity generating plants in Benin, Togo and Ghana. The pipeline is expected to be gradually extended to other countries in West Africa to help facilitate power projects and serve other industrial users.

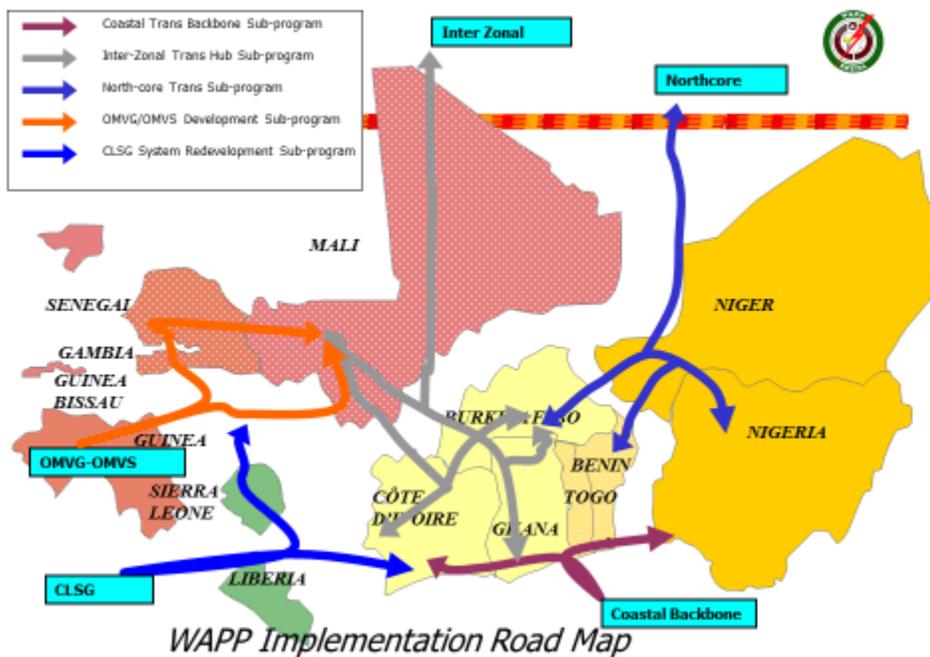
3.2 The West African Power Pool (WAPP)

The West African Power Pool is a specialized institution of ECOWAS established in 2006. WAPP's primary mandate is to facilitate the integration of regional power systems and the realization of a regional electricity market. It is therefore responsible for developing the regional electricity master plan and implementing the regional electricity interconnection projects. WAPP is made

up of public and private generation, transmission and distribution companies involved in the operation of electricity in West Africa.

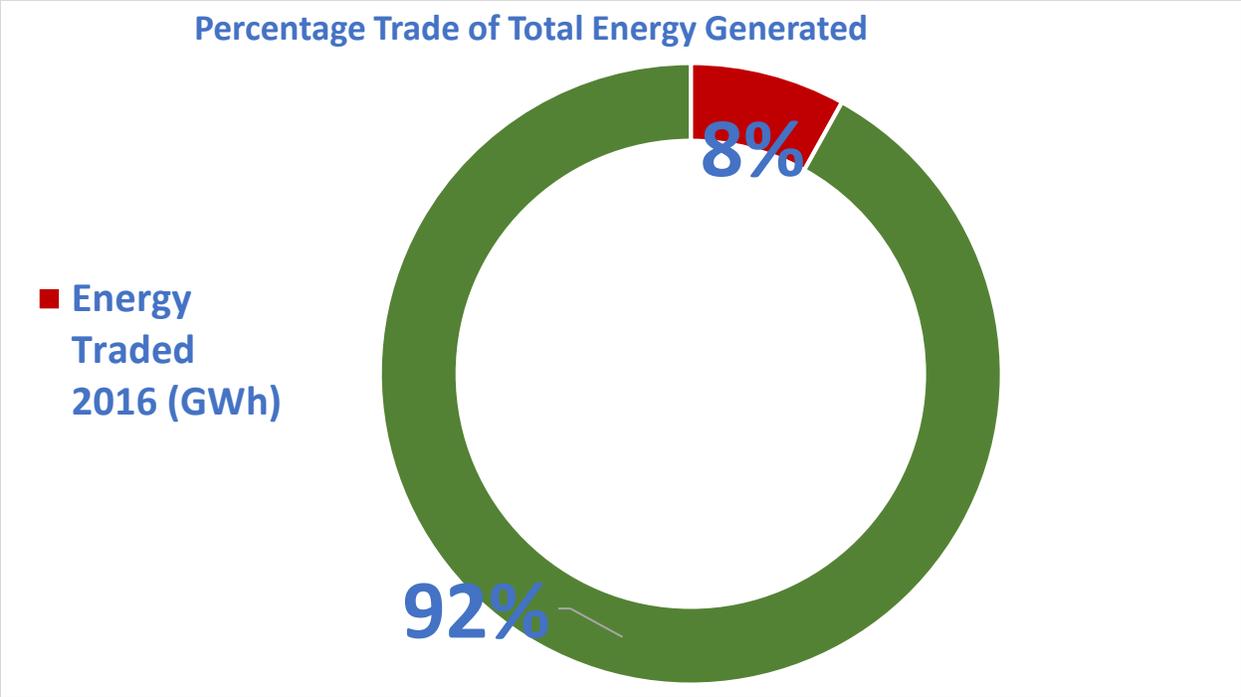
WAPP plays a very active part in promoting new investment in transmission and generation in the regional market and has been instrumental to the development of a number of regional transmission projects to improve interconnectivity among member States. A number of interconnection projects are already in existence while there are plans in place to construct new interconnections to ensure that the entire sub-region is completely looped.

The existing and proposed interconnections are shown below



WAPP is currently working on three regional power generation projects with a total capacity of 1000MW to be located in Ghana, Benin and Cote d'Ivoire respectively. In addition to these, a number of regional transmission network projects have commenced and these include the Ghana –Burkina Faso interconnection, the Cote d'Ivoire-Sierra Leone-Liberia-Guinea (CSLG) Interconnection project as well as the OMVG (Gambia-Guinea-Guinea Bissau-Senegal) project amongst others

Currently, electricity trading among member states is quite low accounting for less than 10% of total energy generated.



Source: B. Adeyomo WAPP presentation 2017

3.3 The ECOWAS Regional Electricity Regulatory Authority (ERERA)

ERERA was established in 2008 as a Specialized Institution of ECOWAS with the mandate of regulating cross-border electricity trading among member States and creating a conducive and enabling environment to attract private sector investment into the regional electricity market. ERERA’s vision is to ensure the highest standards of regulation to achieve a sustainable and efficient regional electricity market for ECOWAS.

3.4 The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)

ECREEE was established in 2008 as a Specialized Agency of ECOWAS and has the objective of creating a favourable framework condition for a regional renewable energy and energy efficient market to contribute to the sustainable economic, social and environmental development of the ECOWAS region. To this end, ECREEE has since put in place the ECOWAS Renewable Energy Policy as well as the ECOWAS Energy Efficiency Policy. It is also working on establishing a clean energy corridor within the region and works closely with ERERA in formulating the regulatory framework for encouraging investment in renewable energy and energy efficiency.

4. EREERA'S ROLE AS REGIONAL REGULATOR

ERERA has the novelty of being one of the few regional electricity regulators in the world. Indeed, the only other regional regulator similar to EREERA is Comisión Regional de Interconexión Eléctrica (CRIE), the Regional Electric Interconnection Commission of Central America, which was created under the Framework Treaty of the Central America Electricity Market. The treaty was entered into by the governments of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama for an electrical interconnection system for Central American Countries (the SIEPAC Project).

SIEPAC has resulted in the development of a regional electricity market and the construction of nearly 1800 Km of transmission infrastructure to increase the transfer capacity on all the interconnecting borders.

Similar to the vision behind the creation of the West African Power Pool, SIEPAC was conceived to stimulate the creation and consolidation of a regional electricity market through the promotion and establishment of legal, regulatory and technical mechanisms to facilitate the participation of the private sector in the build-up of generation and transmission infrastructure for improved cross-border electricity trading between the various countries.

CRIE like EREERA is guided by the principles of gradualism, competitiveness and reciprocity in the development of the regional electricity market.

However, while the mandate of CRIE as regional regulator appears to be limited to providing the regulatory framework required for the implementation of the SIPEC project, the mandate of EREERA as regional regulator is wider as it also has powers to intervene in domestic markets to ensure conformity with the regional rules or upon the invitation of the national regulators to assist on technical issues. The overall mission of EREERA as provided by the Regulation on its operations³ includes:

- The regulation of cross border power trading among ECOWAS member States
- Overseeing the implementation of the necessary conditions to ensure availability and reliability of electricity
- Ensuring a conducive regulatory and economic environment suitable for the development of the regional market

Accordingly, EREERA's mandate allows it to set rules for both the technical and economic regulation of all cross-border electricity trading within the ECOWAs region. In addition, it is also responsible for ensuring the development and monitoring of the regional electricity market and is equally vested with quasi-judicial powers to resolve disputes among market participants. In addition to its role on the regional market, EREERA also has powers to, upon request, assist member States as well as National Regulators on technical issues with respect to domestic regulation. All of these attributes contribute to the uniqueness of EREERA as a regional regulator and it is doubtful if there is currently any other regional regulator vested with as much powers with regards to a regional electricity market.

Comparison of Roles of ERETA and CRIE

S/N	Attributes	ERETA	CRIE
1	Constitution of Regulators	ERETA Regulatory Council is made of up 3 Council Member recruited through a competitive process but must all be citizens of ECOWAS	Made up of one nominated representative from each of the member States
2	Dispute Resolution	Vested with Powers for dispute resolution	Vested with Powers for dispute resolution
3	Market Rules	Vested with Powers to approve Market Rules developed by WAPP	Vested with Powers to approve Market Rules developed by EOR
4	Relationship with National Regulators	Scope limited to regional market but can intervene in national markets on request of national regulators	Scope limited only to regional market
5	Market monitoring	Vested with powers for regional market monitoring	Vested with powers for regional market monitoring

Table 1: Comparison of ERETA and CRIE

5. STATUS OF THE DOMESTIC ELECTRICITY SECTOR WITHIN ECOWAS

The creation of a regional market consisting of countries with varying and wide differences in the status of their national markets has been a major challenge in the setting up of the ECOWAS regional electricity market. The 14 countries involved in the West African Power Pool (Cabo Verde, an Island is not part of the interconnected system) range from very small countries with vertically integrated state owned utilities to partially unbundled systems and on to countries such as Nigeria that have fully unbundled and privatised the erstwhile State -owned power companies.

ERETA at the onset had to carry out initial studies to assess the status of the power sector in all member states in order to establish a strategy for a way forward. The result of the study showed that the member States could be categorized into four different groups in terms of the level of reform and private sector participation in the electricity sector. The categories is summarized graphically in Table 2 below.

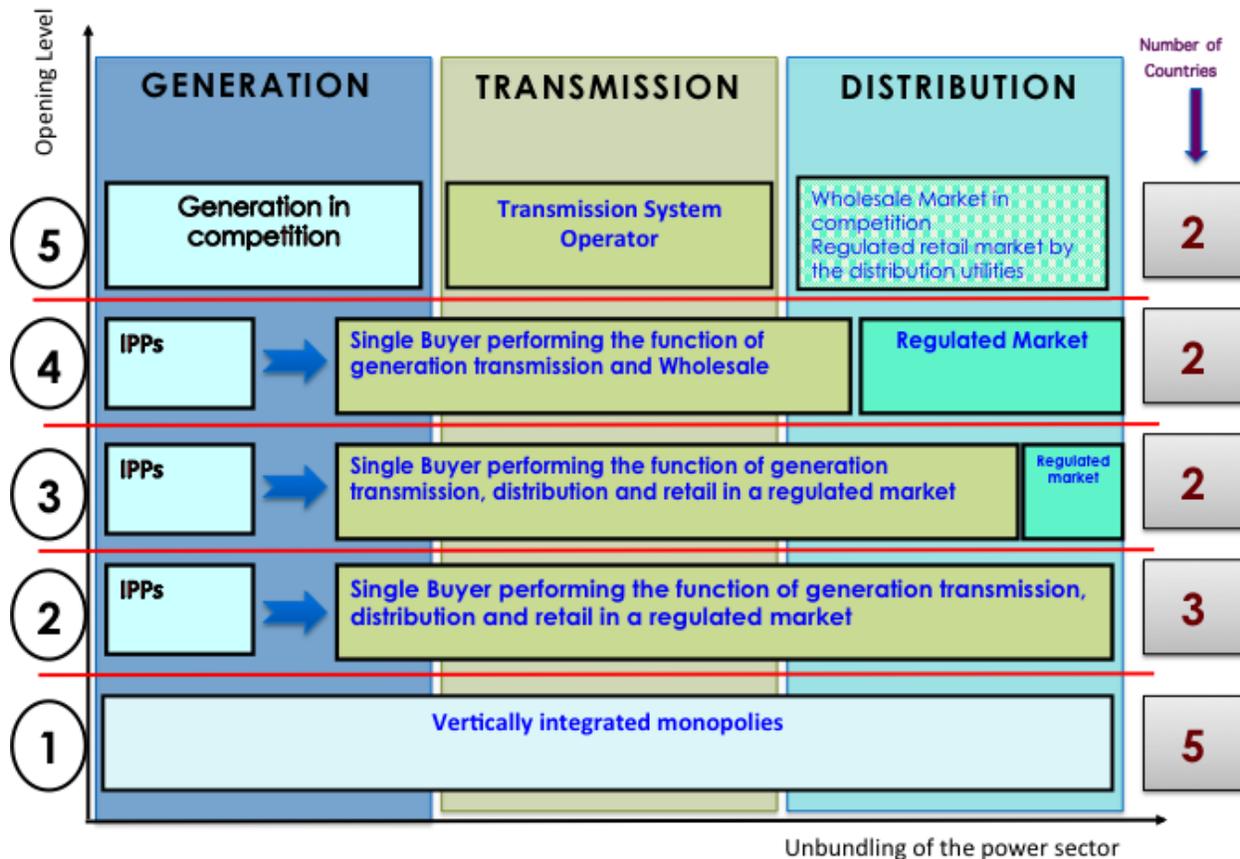


Table 2: Status of ECOWAS domestic power sectors

This disparity in the levels of development of the various national markets on the face of it constituted a major impediment to the development of the regional electricity market as it was obvious that without a basic degree of harmonization by all member States, an integrated electricity market will be difficult to establish and operationalize. Consequently following a number of stakeholder discussions and consultation across board, a number of minimum criteria were identified which would form the initial basic framework for harmonization of policies and legal framework by the 14 member States to allow for the effective take-off of the regional electricity market. These minimum criteria were captured in the legal document known as the Directive on the Organisation of the Regional Electricity Market enacted by the ECOWAS Council of Ministers on 21st June 2013⁴.

6. DIRECTIVE ON THE ORGANISATION OF THE REGIONAL ELECTRICITY MARKET

Article 19 of the ERERA Regulations stipulates clearly the Principles that will govern the regional electricity market and further empowers the ECOWAS Council of Ministers to enact the necessary Directive that will inculcate these Principles and make them binding on all member States. The objective of the Directive is to define the general principles that will govern the Regional Electricity Market within the framework of the ECOWAS Energy Protocol.

The underlying approach is to ensure that the regional electricity market is developed gradually to enable national electricity sectors adapt in a gradual and rational manner given the wide discrepancy already identified in the level of sector development of the various countries.

Accordingly, the Directive addressed the following issues:

a) Market design:

In line with the principles of the ECOWAS Energy Protocol, the Directive provided that the development and establishment of the regional electricity market shall evolve in three (3) phases according to the Regional Market Rules approved by ERECA. The Market Design which has since been approved by ERECA provides for three distinctive phases. The first phase consist of trading by way of bi-lateral contracts (using approved model contracts) which can be short, medium or long term. Transmission tariff for new contracts will be determined by the approved regional transmission pricing methodology. The second phase of the market will consist of a mixture of bilateral contracts and short term day ahead market. Eligible customers will be able to enter into cross border power purchase contracts with generators and transmission tariffs will still be guided by the approved methodology. The third and final stage envisages that the market will be fully liquid with sufficient regional transmission capability and excess generation capacity in some countries. This will ensure a completely de-regulated wholesale electricity market.

Each of these stages will be preceded by the completion of agreed conditions precedent to signal the preparedness of the member States and market participants to fulfill the requirements for the effectiveness of each stage.

b) Structure of National Electricity Markets:

A previous study carried out by ERECA had shown that not only were the electricity utilities in most of the Member States vertically integrated, it was also clear that in the short term, these utilities will not be vertically unbundled due primarily to their very small sizes and need for economies of scales. However, it was also apparent from the studies that there was no separation of costs in accounting for the various segments of the business (generation, transmission and distribution). It was therefore necessary to ensure that at the very least, all member States will ensure a definite cost unbundling along functional lines to allow for transparency and effective allocation of costs needed for tariff determination in the electricity market. To this end therefore, the Directive provided that all member States shall ensure that their existing Electricity Acts and relevant Regulations be amended to provide for functional separation of accounts in terms of Generation, transmission and distribution segments.

c) Regional Transmission Network Open Access:

An obvious pre-requisite to the off-take of a regional electricity market is open access to the regional grid. Again, a result of the study carried out by ERECA prior to the enactment of the

Directive revealed that out of the 14 WAPP member States, only Nigeria and Ghana had laws that allowed for open third party access to the transmission network. The market principles have also envisaged the participation of major eligible customers in the regional market during phase 2 and thus the need to provide for third party unfettered access for this class of customers. Again most of the existing national legislation in the member States had no provision for determination of eligible customers and consequently, no provision for open access to such customers.

The Directive therefore provided for member States to amend their laws to allow for open access to the transmission network on the one hand, while also providing for third party access to eligible customers on the other hand.

d) Harmonization of contracts:

The Market design for the Phase 1 of the Regional Electricity Market provides for trading amongst market participants to be basically by way of bi-lateral contracts. Currently, the level of cross-border electricity trading among member states is quite low accounting for just about 8% of total power generated in the region.

While West Africa as a region has a long history of cross border electricity trading (pre-dating the establishment of ECOWAS), the contractual frameworks for most of these transactions were borne more out of political expediency than the need to have in place a commercially viable contract. With the on-going reform in most of the counties, it has become imperative to review these contracts to make them more sustainable and to also ensure that all new contract are legally structured in line with the emerging regional electricity market.

A number of Member States have previously approached ERETA as regional regulator to provide assistance by way of developing and assisting them in the negotiation of Power Purchase Agreements. This dearth in capacity therefore made it necessary to entrust ERETA with the mandate of developing model bi-lateral contracts for power sales/purchase as well as developing standard connection and use of network agreements. After consultations with stakeholders, ERETA working with WAPP, have now developed the model bilateral contracts. A standard Connection and Use of Network Agreement for access to the Regional Transmission Network has also been developed by WAPP for approval by ERETA.

e) Strengthening of National Regulatory Authorities :

ERETA's role as regional regulator is complemented by the role of the national regulators as the regional market itself can only be sustainably established based on the viability of the domestic markets. In 2012 when ERETA carried out its regulatory studies on the current state of the power sector in the ECOWAS region, 11 out of the 15 member states had in place regulators for the electricity sector while four of the countries had no regulators.

For the 11 countries that had regulators in place, most of the regulators did not have the requisite powers to carry out core regulatory activities such as tariff setting and market

monitoring. Furthermore, most of the regulatory bodies were under-funded and lacked the requisite human and technical capacity to function effectively.

In view of the key role sector regulation and governance has to play in the successful development and functioning of the regional electricity market, the Directive provided that not only are all member States required to establish independent electricity regulatory agencies, all such bodies (including the existing ones) are to be given the required financial support and powers to undertake key regulatory activities including tariff setting and market monitoring.

f) Tariff methodology:

In line with the Regulation on the organization and operation of ERERA, the Directive empowers ERERA (following consultations with stakeholders) to approve the cross border transmission electricity tariff methodology.

g) Support for Implementation of Directives

The successful development of a regional market will require the collaboration of all key stakeholders especially the State actors. To this end therefore, the Directives enjoins all national regulators to support ERERA in the implementation of the Directives at the various national levels.

Member States were also given a time frame of 24 months within which to comply with the provisions of the Directives. States who are unable to comply within the stated timeframe or face peculiar challenges in the implementation of the Directives were also required to inform ERERA of any challenges being faced in implementing the Directives.

The responsibilities for implementation of the Directive is summarized as follows:

	PROVISION	REFERENCES	RESPONSIBILITIES
1	Regional Market Design and Market Phases	Art. 4 & 5	WAPP and ERERA
2	Regional Transmission Tariff Methodology	Art. 6	WAPP and ERERA
3	Model Bi-Lateral Contracts	Art. 8 (1)	WAPP and ERERA
4	Connection and Use of Network Agreement	Art. 8 (2)	WAPP and ERERA
5	Regulation on specific conditions for third party access to the Regional Transmission Network	Art. 7 (3)	ERERA
6	Principles of Transmission Network Open Access for Eligible Customers and Power producers	Art. 7 (1)	Member States
7	Functional or cost unbundling of Generation, Transmission and Distribution segments	Art. 7.(2) (a)	Member States
8	Major Consumers' eligibility to open access to the regional transmission network	Art. 7 (2) (b)	Member States
9	Licensing conditions and procedures for Independent Power Producers (IPP)	Art. 7 (2) (c)	Member States
10	Setting up an Independent Regulatory Authority	Art. 10 (1)	Member States
11	Tariff Setting and Market monitoring power to the Independent Regulatory Authority	Art. 10 (2)	Member States
12	Empowering Independent Regulatory Authority with legal personality, budgetary autonomy and adequate human and financial resources to carry out their mandates	Art. 10 (3)	Member States
13	Support to ERERA for the implementation of the Directive	Art. 10 (4)	National Regulators

7. DEVELOPMENTS SO FAR

By the end of 2015 significant progress has been made by the regional bodies and to some extent, a number of member States in complying with the Directive. While there have been a number of challenges (particularly at the country level) to comply totally with the provisions, the level of efforts made by member States remain commendable. The progress made so far are discussed below.

a) Regional Market design and enabling regulatory framework

With respect to the regional market design, WAPP developed the Regional Market Rules which was submitted to ERERA for approval. The Regional Market Rules govern the commercial transactions pertaining to cross-border electricity trading using the interconnected regional

transmission network. The objective is to ensure an efficient, transparent and reliable market for the sale and purchase of wholesale electricity and ancillary services in the WAPP region. Following a number of consultative meetings on the Regional Market Rules, the Rules were eventually approved by ERECA in August 2015⁵.

ERERA also in September 2015 approved the Regional Operational Manual submitted by WAPP after stakeholder consultation⁶. The Operational Manual is to ensure co-ordinated operation between interconnected power systems in order to achieve high levels of system reliability and control at the points of interconnection based on agreed technical and operational parameters.

ERERA has also approved the regional transmission tariff methodology for the market⁷. The tariff methodology is based on the principles of cost recovery, promotion of efficiency, transparency, fairness, predictability and non-discrimination. After a number of stakeholder consultations, the point to point MW-Km load flow based tariff methodology was adopted.

ERERA working together with WAPP and other key stakeholders have also finalized the model contract templates as well as the dispute resolution procedures for the regional market. The absence of the full complement of the ERECA regulatory council (following the end of the tenure of the pioneer council members) led to some delay in the approval of these documents but hopefully with the reconstitution of the full ERECA council, these documents will soon be approved.

b) National Regulatory frameworks

Following the Directive, the four ECOWAS member states that had no regulators prior to 2012 are now at various stages of setting up their national regulators. ERECA specifically assisted the governments of Sierra-Leone and Guinea in setting up their regulatory bodies following the holding of high level workshops in these two countries to sensitize all key stakeholders on the necessity of setting up regulators. All four countries now have revised legislations in place establishing the regulatory bodies and have also appointed (or are in the process of appointing) key personnel to manage and operate the regulatory agencies.

However, progress has been slower with regards to ensuring that the existing regulators are vested with the full powers to enable them effectively act as independent regulators. Not all the regulators still have powers to set tariffs, and across board, funding of the regulator is still a challenge as most of the national regulators remain financially handicapped.

c) Cost Unbundling

With regards to the issue of cost unbundling, very little progress has been made in this area. With the exception of Nigeria and Ghana where the utilities are also vertically unbundled, none of the member states whose utilities remain vertically integrated have been able to realistically put into effect full cost unbundling ring fenced for the three segments of the business. Some of the countries have commenced action in this area but it does appear that there are real challenges with the required technical capacity in this area coupled with the fact that there is a reluctance

to change from the historical accounting model which these utilities have been used to over the years.

d) Open Access

With regards to the provision for open access to the transmission network and third party access for eligible customers, most member States have had challenges in actually implementing this provision even though a number of the countries have laws in place that allow for the implementation. The inability of most of the member States to set criteria for the declaration of eligible customers means that for now, unfettered access to the transmission network remain the exclusive prerogative of the utility companies who supply all other customers. With the exception of Ghana and Nigeria who have put in place a clear guideline for eligible customers to procure power directly from the generators, none of the other 12 countries have yet established similar guidelines. Given that it is intended under the regional market rules for bulk customers to have the choice of procuring power directly from generators across national borders, it is important that the national governments put in place the enabling policies for declaration of eligibility as this is a necessary step for third party access to the regional transmission grid.

Again the single buyer model still in existence in a number of the member States have also made it practically impossible to implement the policy on open access as competition is a necessary pre-requisite to open access to multiple operators.

Another hindrance to the practical issue of open access is the fact that a few of the member states do not even have transmission infrastructure in existence. Countries like Gambia and Guinea Bissau have no existing transmission infrastructure but it is expected that with the implementation of the OMVG interconnection project, this gap will be filled allowing these countries to implement the relevant provisions.

8. WAY FORWARD

The experiment of ECOWAS so far in developing a regional electricity market, unique both in vision and implementation, has so far yielded a number of positive gains even though a number of milestones envisaged under the Directive on the Organization of the Regional Electricity Market are yet to be met. ERECA so far has served as a model for a number of other regional bodies in Africa desirous of setting up regional electricity regulators for their power pools.

A key success factor to the development of the regional electricity market is the need for the electricity sector reform currently taking place in most of the member states to be continued and fast-tracked. The power sector reform programme as envisaged in most of the member States will address critical issues such as open access which requires legislative intervention. Other issues such as increased private sector participation and declaration of eligibility border on policy directives requiring executive action hence the need for collaboration between the regulators, the legislature and executive in ensuring quick results.

ERERA has a key advisory role to play with regards to the restructuring of the various national markets as the wide disparity in the level of organization of the various national markets will have negative impact on the implementation of the regional market. It is therefore important that during the process of reforming the various national markets, the key stakeholders remain mindful of the roadmap of the regional market so that there will be no conflicts between the national legislation and the regional regulations.

It is unlikely in the near future to have the vertical unbundling of most of the state owned utilities in the region due to the small size and level of development of the power sector. Nonetheless, the functional and financial unbundling of the integrated utilities as provided under the Directive will be achieved more easily if there is some kind of technical support offered to the utilities by way of defining the appropriate accounting criteria that can be used by the companies to implement this provision. ERERA can, as sector regulator, come up with a uniform accounting standard that will be applicable across board as this will not only help the utilities who lack the necessary capacity to implement this provision but will also ensure a degree of harmonization since regional transmission cost will eventually be derived from the cost of transmission at the national level.

Another key issue that is fundamental to the successful implementation of the regional market is the need for capacity building among the national regulators, especially the newly established regulators. A capacity building needs assessment earlier carried out by ERERA has shown the need for urgent intervention especially in the areas of tariff setting, market development and market monitoring as these are still novel areas for regulatory intervention in most of the member States. Without the collaboration of effective and knowledgeable regulators at the national level, it will be difficult to adequately implement and regulate the regional market.

As pointed out earlier, WAPP has secured funding for a number of regional interconnection projects, some of which have already commenced. These regional interconnection projects as well as the three proposed regional IPPs are fundamental to the successful operation of the regional electricity market since the West African vision on regional interconnection stems from the need to harness the energy resources within the region for the greater good of the ECOWAS people.

Since none of the 14 countries making up the West African Power Pool currently meets its national power demand, the success of the regional market especially in phases one and two will depend on the successful completion of the WAPP projects as it is unlikely that most of the national governments will have the resources required to build major power plants and the needed transmission infrastructure.

9. CONCLUSION

The ECOWAS regional electricity market which was conceived to facilitate the harnessing of the huge energy resources in the region to improve access to electricity and act as a catalyst for the economic and social development of the region has so far recorded a number of success even though it will take a long time to achieve all the key objectives.

Some of the key factors that have facilitated this regional integration project include:

- A shared regional vision that has manifested in the political will among all member States to take the necessary action. The Directive on the Organization of the Regional Market signed by the member States and currently being implemented across board is a clear manifestation of this shared vision
- Funding for the regional interconnection projects has also made it possible to begin to actualize this shared vision. Even though WAPP currently has not secured funding for some of the interconnection projects, a number of key interconnection projects have the needed funding and this will ensure the gradual development of the market as envisaged
- The need for a clear and transparent institutional and legal framework for the implementation of the regional market is definitely essential. Again, in the case of ECOWAS, institutions like EREDA and WAPP were created and given full legal capacity to establish and drive the regional market. This has made possible to put in place a clear a definitive roadmap and the role each person is expected to play towards the realization of this regional vision
- It must also be pointed out that collaboration with the national stakeholders in the electricity market is a key factor for the efficient operation of the regional market. In the case of ECOWAS, EREDA has effectively established the necessary framework for this collaboration through the establishment of two standing committees, the Committee of Regulators and the Committee of Operators which meets periodically to discuss pertinent issues relating to the regional electricity market. A third committee, the Committee of Consumers will be set up very soon, and these three standing committees will work together to ensure continuous dialogue on key issues

While, some successes has been accomplished, it is still important though that pressure is brought to bear on the national governments that have been slow in carrying out the reform programme in some of the countries to fast track these initiatives as without the acceptable level of harmonization envisaged by the Directive on the Organization of the Regional Electricity Market, it will be difficult to move to other stages of the regional market development. If the reforms triggered by the establishment of the market are pursued assiduously, then the ECOWAS region may well be on the right path to increasing access to electricity which will in turn jump-start the much needed economic and infrastructural development within the region.

REFERENCES

1. Photicus. (2015, August). 'Electricity Consumption per capita'[Online]. Available: http://www.photius.com/rankings/2015/energy/electricity_consumption_per_capita_2015_1.html
2. International Energy Agency. (2016). 'World Energy Outlook 2016 Electricity Access database' [Online]. Available: <http://www.worldenergyoutlook.org/media/weowebiste/2015/WEO2016Electricity.xlsx>
3. ECOWAS Regional Electricity Regulatory Authority. (2007, December 27). 'Regulation C/REG. 27/12/07- ERERA's Operations Act '[Online]. Available: <http://erera.arrec.org/en/2007/12/27/regulation-creg-271207-on-the-composition-functions-and-operation-of-the-ecowas-regional-electricity-regulatory-authority-erera/>
4. ECOWAS Regional Electricity Regulatory Authority. (2013, June 21). 'Directive on the Organisation of the Regional Electricity Market '[Online]. Available: <http://erera.arrec.org/en/2013/06/21/seventieth-ordinary-session-of-the-council-of-ministers-of-ecowas/>
5. ECOWAS Regional Electricity Regulatory Authority. (2015, August 18). 'Resolution No 005/ERERA/15 - Approval of the Regional Market Rules of the WAPP' [Online]. Available: <http://erera.arrec.org/en/2015/08/18/approval-of-the-regional-market-rules-of-the-wapp/>
6. ECOWAS Regional Electricity Regulatory Authority. (2015, September 29). 'Resolution No 007/ERERA/15 – Adoption of Operations Manual of the West African Power Pool' [Online]. Available: <http://erera.arrec.org/en/2015/09/29/adoption-of-operation-manual-of-the-west-african-power-pool/>
7. ECOWAS Regional Electricity Regulatory Authority. (2015, August 18). 'Resolution No 006/ERERA/15- Adoption of the Tariff Methodology for Regional Transmission Cost and Tariff' [Online]. Available: <http://erera.arrec.org/en/2015/08/18/adoption-of-the-tariff-methodology-for-regional-transmission-cost-and-tariff/>