



## Formulation of continental strategy and action plan of proposals - Stakeholders Dialogue Workshop

Addis Ababa, Ethiopia 23- 24 February 2016

*in the margins of the Joint Africa-EU Strategy "Reference Group on Infrastructure",*

*(25-26/02/2016)*

### Information document for discussions

#### Reminder objectives of the workshop:

Discussions at continental and regional levels:

- Present situation and gaps regarding regional investment treaties and trade agreements for energy products and services, best practices identified.
- Priorities for the energy legal framework efficiency and enabling involvement of private sector in the development of energy access, renewable energy and energy efficiency;
- Role of continental regional and national levels: priorities and implementation modalities of decentralization of decision making in the energy sector development including the procedures for dispute settlements;
- Formulation of continental strategy and action plan of proposals.

#### Introduction:

The purpose of our assignment was to:

- i) Assess existing regulations at the national, regional and continental levels;
- ii) Identify gaps, weaknesses and opportunities in the effectiveness of regulations in the energy sector in Africa;
- iii) Identify best practices;
- iv) Recommend energy harmonisation modalities at regional and continental levels.

The report will be the background document for the regional and continental stakeholder's workshop/ dialogue. This presentation summarizes the report for easy/short reading and prepares our discussions.

#### Present situation, gaps, best practices:

In order to answer to the objective of harmonization of the regulatory frameworks and promote active cooperation between regulators at regional and continental level, we have followed a bottom up approach for the analysis of the situation.

National level, the current situation has been analysed for the 54 different African countries (general database); gaps and barriers, benchmark and best practices concerning electricity regulatory framework were identified for some selected representative countries, in order to identify needs and actions for reforms and cooperation learning from lessons of past experiences, difficulties and success stories.



Regional level, the assessment concerns 5 groups of Regional organizations, their activities and best practices in the regulatory framework of the energy sector and a comparison of these institutions:

- UMA / CEN-SAD / COMELEC
- ECOWAS / UEMOA / WAPP / ERERA
- ECCAS / CEMAC / CAPP / CEPGL
- COMESA / EAC/ IGAD / EAPP / RAERESA
- SADC / SAPP / RERA

Continental level, the evaluation describes the situation for the Continental institutions AUC / NEPAD / NPCA / PIDA / AFREC / AFSEC (UNECA could be merged with this group, as UNECA now supports a NEPAD activity directly related to this project) and AFUR.

#### **Main results of the situation assessment:**

National level: Many African countries already have institutions, legislations and regulations which allowed interconnection and electricity market. Benchmark national legislation and best practices identified represent good examples for less advanced countries, regarding the different framework conditions, for cooperation and harmonization. The report also reviews the gaps/barriers and weaknesses which will have to be removed through introduction of reforms by a number of other African countries:

The power sector of the Sub-Saharan countries with the exception of South Africa comprise of relatively small systems which are characterized by technical, operational and financial problems. The creation of the regional markets is essential for creating the environment to attract the needed (funds) capital, technology and expertise to help fix the challenges of the electricity deficit.

Many countries underperform in rate and level of electricity access, because of weak means and also due to a lack of policies, poor enabling environment for private sector investments, and institutions for development and roll-out of related programmes, in particular through innovative ways, including REs and mini-grid solutions.

It must be noted that the shortcomings of the African Energy Sector are not due to the challenges posed of the inadequacies of the legislative and regulatory frameworks alone but a combination of factors.

Therefore the assessment must also be viewed in the context of the traditional financial under performance of the existing utilities and their ability to adequately respond to the needs of the sector.

The macro-economic environment and sometimes protracted power shortages undermine the utilization of some of the best formulas (Ghana tariffs example).

Despite a large number of best practices, there are remaining range of barriers hindering the development and access to modern and sustainable energy services on the continent, including: low levels and lack of effective policy, regulatory and institutional frameworks; unattractive energy market to potential investors due to high investment costs and low technical skills and implementation capacity, amongst others.



CEN-SAD has been assessed with UMA, EAC and IGAD with COMESA, as these institutions are working on the same geographical areas.

N°	Organisation and regulations criterion	UMA / COMELEC / CEN-SAD	ECOWAS / UEMOA / WAPP / ERERA	ECCAS / CEMAC / CAPP / CEPGL	COMESA / EAC / IGAD / EAPP / RAERESA	SADC / SAPP / RERA
1	Institutional framework of the Regional Economic Community	COMELEC is adopted by UMA as its specialized agency. Main document: Statute.	Energy Protocol 2003. Energy policy. Electricity master plans. RE/EE policy.	ECCAS Strategic document. CEMAC priority regional projects. ECCAS+CEMAC White Book Energy. Limited resources.	Energy policy framework and programme at COMESA. Seven regional / sub-regional institutions and initiatives are involved in power sector projects	Energy Protocol in 1996. SADC-DIS reports to the Committee of Senior Government Officers, under the Integrated Council of Ministers, which usually makes decisions about energy markets.
2	Institutional set-up and governance of the Power Pool	Est. 1989 members are the utilities of all UMA countries. COMELEC has no official mandate to mobilize funding – this happens at the national level by the member States.	Est.2006. members are all utilities of 14 countries. Well identified pool departments and entities, satisfactory governance.	Est.2004. members are ECCAS member States. Limited commitment from its members, limited financial resources.	Est.2005. members are utilities from 11 countries. EAPP-PS still has limited financial resources.	Est.1995. 16 electric power companies from 12 countries. A management committee oversees the SAPP Coordination Centre.
3	Active technical committees and working groups, and pool staff	COMELEC is organized in internal commissions;(i) Commission of the Maghreb Interconnection (ii) Commission Planning and Studies (iii) Technical Commission (iv) Human Resources Management Commission (v) New and Renewable	Four active organizational committees + task forces. Competent staff, numbers adjusted to financial resources	Three sub-committees and expert group, could be more active with more resources. CAPP-PS has three sector professionals.	Three technical sub-committees formed by senior staff of member utilities, who can hardly dedicate sufficient time to these. EAPP-PS Staff capacity being strengthened.	Four active sub-committees, + dedicated working groups. SAPP-CC staff adequate re-qualifications, experience and number.



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		Energies Commission				
4	Institutional set-up and experience of the regional regulatory authority	No regional regulator. All countries apart from Libya have national regulator.	Est.2008. Three commissioners, consultative committees. Still imbalanced staff resources.	Statutes have been approved, not yet established.	IRB established in 2012 as the regulatory authority, with only one person. RAERESA (association) active since 2010, but limited resources and staff.	RERA, association est.2002. Executive Committee, three portfolio committees, five sub-committees. Very limited permanent staff.
5	Regional institution responsible for renewable energy and energy efficiency	RCREEE covers all of the Arabic world (UMA countries plus Egypt Djibouti, Sudan and Middle East countries)	Est.2008. Exec Board + technical committee. 30 staff. Policies, 12 regional programmes. Data base and mapping.	No specific institution. Under responsibility of ECCAS and CEMAC.	The EACREEE is being established?	SACREEE is not yet operational.
6	Institution / Pool's achievements and energy exchanges	Interconnections are available ((i) 400 kV connections between Spain, Morocco, Algeria and Tunisia, and (ii) 220 kV connections between Algeria-Tunisia-Libya and Egypt. A MoU was signed in 2003 by the EU and Algeria, Morocco and Tunisia for the establishment of Euro-Maghreb Electricity market. Morocco-Algeria-Tunisia	Active and regular exchanges within each of the three sub-networks.	Important generation investment, mainly hydro, in each country. Limited cross-border energy exchanges.	Energy exchanges remain limited for lack of important interconnections.	The pool is operated as a single control area, however with still potential difficulties due to transmission constraints. Exchanges in the form of bilateral contracts and day-ahead market are active.



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		transmission system operates in synchronous mode with the European grid.				
7	Infrastructure investment of regional interest	400/500 kV transmission lines are planned for the interconnection of Libya, Tunisia, Algeria, Morocco and Egypt. HV DC lines are planned with EU (Tunisia-Italy, Algeria-Spain, Algeria-Italy, Libya-Italy)	Full and solid interconnection: 2018-2020. Reliable synchronization of Nigeria: after 2020. Interconnection with CAPP will come later on.	Several priority projects will lead to increased generation capacities and strengthening of interconnections.	Important transmission lines would be completed between 2016 and 2018, as well as generation projects; potential rapid development of exchanges.	21,000 MW generation commissioned in 2014-2017. optic fibre network and VSAT telecom being completed. Several major interconnections within SAPP, and with EAPP and CAPP.
8	Energy treaties, trade agreements	No information	No information	No information	No information	No information
9	Regional regulation on regional electricity markets	N.A.	Directive on the organization of the regional market, ERERA. Broad obligations.	Essentially the approved market rules and operations code.	Only draft market rules and operations manual.	Rules have been harmonised under SADC Council of Ministers.
10	Infrastructure development planning. Project preparation, feasibility studies: obtaining finance and facilitating investment	ELTAM study (2005) MEDRING study (2003, updated in 2010)	Revised master plan, 2012. Transfer of software. Active preparation and follow up or regional interconnections and power generation projects.	Major regional interconnection study in 2009. No pool plan since then. Effective approach and method for MV trans-border electrification.	Regional master plan revised in 2014 by EAPP. Limited follow up of interconnections by EAPP.	Pool plan updated in 2009 and 2014. SAPP strengthened project preparation capacities, and developed environmental guidelines.



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	conditions for interconnection projects.					
11	Operations of interconnections and transmission networks.	The Interconnections Committee is responsible for the Operations of interconnections and transmission networks.	Operations manual, 2008, latest version approved in 2015. Procedures to be completed in 2016.	A draft code has been adopted. To be further refined in the future.	A draft interconnection code has been prepared.	Operating Guidelines initially developed in 1996. Regular updates. Automatic generation control installed in major countries.
12	Regional market design and rules	The main principal is to have a zero balance at the end of the year for each country. Bilateral agreements exist.	RMR approved in 2015 = market phase 1. Further work planned until 2018.	Market Code adopted in 2009: common rules for member countries. Energy exchange rules to be developed in the future.	Draft regional market rules approved by the Ministers in 2011. Grid code being established.	Regional grid code established. Guidelines for cross-border trading approved. New SAPP market guidelines approved by management committee in 2014.
13	Market operations	No information	SMO to be appointed 2016-2017. Rules for market phase 2.	Specific rules would be established when a SMO is in place.	Specific rules would be established when a SMO is in place.	Day-ahead market book of rules is operational.
14	Public private partnerships	No information	Workshops for staff and members. Innovative set-up for CLSG.	Workshops for pool members? No common rule.	IPP procurement procedures in place. RAERESA would produce guidelines.	Search for innovative contractual arrangements for new infrastructure financing, particularly transmission.
15	Contracts. Power purchase agreements,	No information	Drafts prepared for WAPP and ERERA. To be completed and endorsed,	Models of contracts were established.	Draft templates have been prepared.	Part of the grid code.



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	including for MV cross-border electrification.		2017.			
16	Connection and use of network agreements	No information	Drafts prepared for WAPP and ERERA. To be completed and endorsed, 2017.	Models of agreements have been prepared.	Draft templates have been prepared.	Part of the grid code.
17	Tariff methodology for determining transmission costs and tariffs.	No information	Draft transmission tariff method has been prepared. To be finalized, 2017.	Not yet addressed in detail.	A draft cross-border Transmission Tariff Methodology has been prepared	Transmission pricing methodology recently revised.
18	Promotion of electricity generation from renewable energy	The New and Renewable Energy Commission is responsible for integrating renewables in the grid using the best technical and economic conditions.	RE policies adopted by ECOWAS ministers.	ECCAS and CEMAC framework documents.	Guidelines prepared by RAERESA	Several member countries have introduced innovative schemes.
19	Energy Efficiency	No information	EE policies adopted by ECOWAS ministers.	ECCAS and CEMAC framework documents.	Guidelines prepared by RAERESA	SAPP introduced various demand side management initiatives.
20	Dispute resolution and sanctions	No information.	ERERA has the authority. Procedures being detailed, 2016.	Principles established in statutes of the future regional regulator	No procedure in place.	No information.
21	Regional legislation / regulation providing a	No legal framework established.	ERERA Directive on the organisation of the regional electricity market.	See above mentioned market rules	No legal framework established.	No relevant information available.



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	framework for national legislation		Obligations from regional policies.			
22	Preparedness of member countries and utilities. Support to reforms and implementation of standards. Benchmarking.	No information	Coordination and assistance to national regulators, related to regional market, + RE / EE, distribution, quality of supply and other standards.	Benchmarking exercise still in progress.	Assessment of technical, regulatory, financial framework of national electricity systems carried out in 2011; no update.	SAPP data base filled according to information sent by member utilities and countries.

(N.A. = not applicable).





**Regional level:** The electricity sectors of most of the African countries have undergone reforms (at various stages) with the assistance of regional organizations. Several regional and continental initiatives are also being implemented for achieving regional and continental goals in energy supply and access. Power Pools represent a real success especially SAPP and WAPP.

The adequacy and efficacy of the legislative and regulatory framework for the electricity market and industry is as important a factor as the commitment and political will to take decisions and implement them towards the scaling up of generation, improvements in governance of the sector operators, development of competitive markets and ensuring success in access programmes.

Existing disparities in the regional development of the legislative and institutional framework for electricity, renewable energy and energy efficiency limits the extent of the comparative analysis. The developments within the SADC/SAPP and ECOWAS/WAPP/ERERA regions are ahead of the rest in the electricity sector. With regard to renewable energy and energy efficiency the RCREEE and ECREEE are more advanced.

**Continental level:** Presently, the AUC and its other continental agencies relevant to the development of the energy sector and related continental harmonization (including PAP, NPCA, AFREC/AFSEC) do not exercise any legislative power. Same observation is for AFUR which represent less than 50% of African countries. The role of these continental institutions may be limited to information, advice, getting lessons from best practice for dissemination, assistance, model of contracts.

AUC / NEPAD / NPCA / PIDA / AFREC / AFSEC

Organisation and regulations criteria	Present situation (2015)
Institutional set up and resources	AUC/Department Infrastructure Energy (DIE) NEPAD, New Partnership for Africa's Development NPCA, NEPAD Planning and Coordinating Agency AFSEC depends on AFREC, which itself is an institution of the AUC. AFSEC was inaugurated on 28 February 2008. There is an equivalent commission for petroleum standards. AFSEC has a council, a management committee, a secretariat, technical studies committees, a compliance assessment committee, and a treasurer.
Committees and support structures	As specified on AFSEC web site, all users of electrotechnical standards in African countries - electricity utilities, the national standards bodies, electricity regulators, consultants, contractors and suppliers of electrical equipment and services – should participate in the activities of AFSEC, by forming a national electrotechnical committee in each country. Several countries have fully established committees, either as members of the IEC, or through the IEC affiliate country programme for developing countries. National electrotechnical committees are the potential statutory members of AFSEC. AFSEC dedicated working groups, in connection with CIGRE and other international organisations (IEC, OPT) and with their support, are working effectively. Such committees or groups are a good example of what could be done to develop and harmonise legislation in Africa.
Main achievements	Infrastructure regulation and the harmonisation of regulatory policies on the continent remain part of the strategy which the New Partnership for Africa's Development (NEPAD) is promoting to attain the requisite enabling environment to attract investments, fast-track the facilitation of infrastructure development and integration as well as meet the UN Millennium Development Goals. PIDA (Programme for Infrastructure Development in Africa) aims at accelerating socio-economic development and poverty reduction through improved access to integrated regional and continental infrastructure and services. PIDA has 51 cross border



Organisation and regulations criteria	Present situation (2015)
	<p>infrastructure projects consisting of 400 actionable sub projects covering energy, transport, trans-boundary water and ICT. The PIDA was adopted by the Heads of State and Government (HSG) of the African Union (AU) in January 2012. The HSG also adopted an institutional framework for the implementation of PIDA (i.e. the Institutional Architecture for Infrastructure Development in Africa (IAIDA)) and assigned the roles and mandates of the different stakeholders involved with the PIDA implementation. The architecture includes the following structures: the Council for Infrastructure Development (CID), the Infrastructure Advisory Group (IAG) and the PIDA Steering Committee (SC).</p> <p>The NPCA pushes for regulatory reforms and new policies. At the 1<sup>st</sup> PIDA Week (13-17 November 2015), most of the participants stressed the need for national policy, legal and regulatory frameworks, as well as sustainability of national regulators, on which governments are committed, and on improvements in governance and business environment to attract the private sector. The need for harmonisation of regulations and standards, for roads, railways, energy, was pointed out. Among the constraints in this respect are the limited resources of African countries for R&amp;D and for laboratories, relating to standards.</p> <p>UNECA supports a project of NEPAD Energy Programme, to harmonise laws, policies and regulations, particularly to promote private investment. One of the objectives of this project is to resolve constraints related to legislation in cross-border projects, in roads, ICT and energy.</p>
Contributions to infrastructure development	<p>For project preparation, NEPAD IPPF is a multi-donor trust fund for financing high quality and viable regional and continental projects.</p> <p>PIDA provides long term assistance to RECs, to have a PIDA core team at each REC.</p>
Promotion of RE power gen.	<p>Reports and documents to be found.</p>
Legislation / regulation providing a framework for national legislation	<p>AFSEC has proposed that an African level directive be issued by the AUC, which would create a framework for mutual recognition of legal and standards frameworks, and could be implemented via the RECs; for instance, national laws in West Africa are connected to ECOWAS Directive. But a supra-regional paper is needed to define on which legal bases energy is sold and purchased.</p>
Support to reforms..	<p>Reports and documents to be identified.</p>

For other types of action, no report or no information about AUC implication.



**Best practices and gaps identified:**

N°	Organisation and regulations type of action	Best practice /regions	Preliminary conclusions	Scope for co-operation
1	Institutional framework of the Regional Economic Community	None	Departments responsible for energy in all RECs have very limited staff and resources. All RECs have been able to define framework energy policies and supervise pool master plans. However, the infrastructure investment process is effective mostly when supported by national governments and major utilities, and when the power pool has sufficient resources. This is the case for WAPP, as well as for SAPP where investments are promoted by three major countries. In Eastern Africa, plans and investments have impulse from several regional institutions, among which coordination remain unclear. Continental institutions still have limited resources on these subjects.	To be analysed
2	Institutional set-up and governance of the Power Pool	South, then West	SAPP has the most effective governance, followed by WAPP: commitments from member utilities, regular meetings of steering, executive or management committees.	Lessons from experience for EAPP and CAPP
3	Active technical committees and working groups, and pool staff	West, South, probably North	The comparison of power pools illustrates the importance of technical or organisational committees, which bring together senior staff and executives from member utility companies, even more when these committees are reinforced, like in the WAPP and SAPP, by tasks forces or working groups dedicated to specific subjects. These committees are essential to speed up the completion of master plans, market rules, operations codes or environmental guidelines. Mutual support between committees and pool staff is effective when specific departments (even with limited staff) within the pool are responsible for the same areas, e.g. planning, operations, markets or environment. These committees, task forces and working groups are a very solid and reliable instrument for the harmonisation of regulations within each pool and among different African power pools. At continental level, the experience of AFSEC is also very positive.	Transfer of expertise to EAPP and CAPP
4	Institutional set-up and experience of the regional regulatory authority	None is really emerging	Only ERERA, under ECOWAS, has been able to issue a Directive which impose obligations (although still rather soft) to member countries. SADC approach is rather different, as agreements are usually reached between pool members, the SAPP and RERA, and proposed rules are then taken to the Council of Ministers. It would seem that RERA's committees play an important role, as RERA itself has very limited resources. For COMESA, RAERESA has been active, but is also constrained by its limited resources.	All regional regulators need to be strengthened and to learn from each other and worldwide experience
5	Regional institution	North, West	Only ECREEE under ECOWAS and RCREEE have already acquired substantial experience, and are able to mobilise	Transfer of expertise



N°	Organisation and regulations type of action	Best practice /regions	Preliminary conclusions	Scope for co-operation
	responsible for renewable energy and energy efficiency		member countries to prepare and implement RE and EE strategies, and disseminate lessons from successful operations among North and West African national ministries and government agencies.	from RCREEE, ECREEE, + expertise of some advanced African countries
6	Pool's achievements and energy exchanges	West, South	WAPP members have learnt from energy exchanges, especially within the central sub-network and OMVG/OMVS, over more than 20 years; however, several countries face generation deficits which are hardly compensated by imports. The SAPP has managed to organise bilateral contracts and to set-up a day-ahead market, although these exchanges are still seriously constrained by insufficient transmission capabilities. Therefore, lessons from the experience of these two power pools will be extremely beneficial for CAPP and EAPP.	Transfer of expertise from WAPP and SAPP
7	Infrastructure investment of regional interest	West, then South, then East, then Central Africa	All member countries in each of the four sub-Saharan power pools are engaged into massive generation investments which will practically double their capacities in 2020 or 2025, for many of them, compared to 2010. Major interconnections should allow a rapid development of regional markets in WAPP and EAPP between 2018 and 2020. CAPP member countries gradually strengthen their national grids, which will facilitate interconnections within the pool. New interconnections will also link SAPP with CAPP and EAPP, which will oblige these three power pools to rapidly adapt their market and operations rules to become compatible with each other.	Exchange of experience, possibly through PIDA
8	Energy treaties, Trade agreements		Convention on African Energy Commission of July 11, 2001 which established CEMA; Decision of CEMA of February 17, 2008 Establishing AFSEC; Economic Commission for Africa and United Nations Resolutions	
9	Regional regulation on regional electricity markets	No REC has introduced strict obligations	Only ERERA, under ECOWAS, has published a directive introducing obligations for member countries, in the perspective of the regional electricity market. In CAPP, the market rules adopted by all member countries introduce similar obligations for their governments and utilities. In EAPP and SAPP, there does not seem to be a regional legal framework, but each utility has to abide to market rules and grid codes. To be completed with the conclusions and recommendations of AFUR benchmarking report 2013 on the subject.	Initiative required from the AUC.
10	Infrastructure development planning. Project preparation,	West, South, East for master	WAPP, EAPP and SAPP have updated their pool master plans between 2012 and 2014, with substantial input from the pool respective committees and staff, and external support from consultants. In CAPP, the interconnection study completed in	Exchange of experience among power pools.



N°	Organisation and regulations type of action	Best practice /regions	Preliminary conclusions	Scope for co-operation
	feasibility studies: obtaining finance and facilitating conditions for interconnection	plans.  West and South for project preparation	2009 will still need to be updated, but this is not yet critical for the pool development. Since about 2010, the WAPP-PS has substantially strengthened its capacity to prepare and speed-up the execution of interconnection investments. This is also the case for SAPP recently. EAPP and then the CAPP are likely to follow these examples. NEPAD IPPF will provide support to RECs on infrastructure project preparation.	
11	Operations of interconnections and transmission networks.	South, West	WAPP and SAPP have steadily worked on the development and improvements of their respective operations manuals. They have no reason for adapting these rules / manuals to those of other power pools, as these satisfy all their member utilities. WAPP might be connected with CAPP sometimes between 2021 and 2025, therefore adaptation of rules is not urgent. For CAPP and EAPP, the operations codes are still in draft form and therefore lessons can be taken from SAPP experience, in the perspective of future interconnections.	Transfer of expertise from SAPP and WAPP.
12	Regional market design and rules	South, West	For WAPP and SAPP, the latest versions of regional market rules or guidelines have been approved by their supervisory institutions in 2014-2015. Further work is planned on WAPP's RMR. Market rules / codes of CAPP and EAPP were approved in 2009 and 2011, respectively. Mutual exchanges of information and co-operation between CAPP, EAPP and SAPP are needed, in the perspective of future interconnections.	Transfer of expertise from SAPP and WAPP.
13	Market operations	South	WAPP, and later on EAPP and then CAPP, would take useful lessons from SAPP's SMO experience, as they have already done in recent years.	Transfer of expertise from SAPP.
14	Public private partnerships	West	This subject is also discussed in detail in the components of the project relating to national legislation and regulation. As far as regional infrastructure and markets are concerned, PPP has to do with a) the development of major interconnections, and b) important power plants of regional interest. For interconnections, the institutional and contractual arrangement set up by WAPP for CLSG may be an interesting example for SAPP, whose members look for innovative arrangements. For generation, the experience of OMVS / OMVG, possibly of CEB (Togo-Benin) may be useful for other African countries.	Exchange of experience among all pools.
15	Contracts. Power purchase agreements, including for MV cross-border electrification.	South	Only SAPP seems to have established models of contracts, which is a necessity for the pool as it handles bilateral contracts and has established a short term market. The other three pools have such contracts in draft form, which will be to be refined and updated until 2017-2018. These three power pools, their regional regulators or regulators' associations, as well as a number of national regulators, still request external assistance to establish or adapt such contracts. Therefore,	This subject urgently needs to be taken at AUC level.



N°	Organisation and regulations type of action	Best practice /regions	Preliminary conclusions	Scope for co-operation
			addressing this issue at continental level is justified and urgent.	
16	Connection and use of network agreements	South	Item as above.	This subject urgently needs to be taken at AUC level.
17	Tariff methodology for determining transmission costs and tariffs.	South	In SAPP, the transmission pricing method and tariffs have been recently revised. Tariffs will be finalised by WAPP and ERERA until 2017. Tariffs are in draft form in EAPP; there is scope for co-operation at continental level on transmission tariffs for interconnections.	Exchanges between all pools need to be strengthened .
18	Promotion of electricity generation from renewable energy	West (at regional level)	Only ECOWAS seems to have adopted RE policies at regional level, and ECREEE has initiated a number of activities related to the development of RE for electricity generation. In other RECs, framework documents and guidelines confirm the priority given to RE. AFUR has also published a benchmarking report. As a number of African countries today offer examples of successful achievements, further co-operation is needed at continental level.	Transfer of expertise: from RCREEE and ECREEE under the aegis of AUC.
19	Energy Efficiency	South	SAPP member countries have carried out various demand side management actions with, reportedly, very significant impacts. Regional policies have been developed by ECOWAS/ECREEE, and to some extent by other RECs. Strengthening co-operation is justified at continental level.	Lessons from experience of SAPP and more advanced countries.
20	Dispute resolution and sanctions	None	Procedures are gradually established in different power pools, starting with ECOWAS where ERERA has a statutory authority in this respect.	
21	Regional legislation / regulation providing a framework for national legislation	No best practice	Only ERERA, under ECOWAS, seems to have adopted a directive introducing obligations for member countries. To be further checked for other regions. AFUR has published guidelines on quality of service.	To be assessed, depending on the results of analysis of national level criteria.
22	Preparedness of member countries and utilities. Support to reforms and implementation of standards. Benchmarking.	South, East	SAPP has the most comprehensive data base about the performance of the electric power systems of its members (without significant pressure on its member utilities). In other regions, attempts to benchmark national policies, regulators and electricity sectors did not yet give concrete results. Regional regulators tend to provide support to national regulators, as well as for the establishment of new regulators, in WAPP, EAPP and SAPP.	To be assessed, depending on the results of analysis of national level criteria.



## **Conditions and preliminary recommendations to be discussed:**

### **1. *Reasons for governments to be interested/ willing for interconnection, regional energy market, cooperation and harmonization***

The arguments vary depending on real situation, and must be adapted to each background. Just some examples are listed here.

Following the preamble of the Convention of the African Energy Commission (2001) some reasons remain valid for many African countries:

- Severe energy shortages in many African countries have constrained industrial development effort for many years in spite of the enormous conventional energy and RE potential/ resources.
- Need to co-ordinate the actions of the African countries to develop their energy resources and deal jointly for efficient and rational exploitation and utilization, and socio-economic development.
- The Treaty establishing the AEC, Article 54 (2) (f): member States of the AEC shall in the co-ordination and harmonization of their policies and programmes in the field of energy “establish an adequate mechanism of concerted action and co-ordination for the collective solution of the energy development problems within the Community... “.
- Answer to electricity needs and energy access,
- Reduce power shortages and increase quality (low voltage) (frequency, duration, peak loads?)
- Enabling cost-reflective tariffs including generation transmission and distribution is necessary,
- Increase efficient power generation, transmission and distribution, reduce technical and commercial losses,
- Prepare power plan M and L terms such as Least Cost Power Development Plan (LCPDP),
- Increase national investments capacities in the energy sector
- Reduce dependence on imports and political risks,
- Increase the security of foreign supply,
- Attracting private sector investors,
- Interconnection costs often lower than generation costs,
- Valorization of RE resources,
- Increase of exporting capacities,
- Etc.

As it has been requested during the regional missions, highlighting the reasons and barriers may help regional and continental institutions to adapt their role depending on each country or group of countries (same profile).

### **2. *Conditions***

- Existing energy policy including RE and EE with specific plan regarding power with objectives for S, M, L term.
- Identification of electricity consumption for the main users, peak loads analysis,
- Efficient management for generation, transmission and distribution, inadvertent power, metering
- Business plan for utilities
- Regulation authority independent from Utilities (generation, transmission and distribution),
- Standards and norms,



- Unbundling generation from transmission,
- Legal framework attracting involvement of private sector,
- Energy market driven by demand,
- Increase of RE and EE,
- FiT or bidding procurement
- Funding mobilization and investments guarantee (political and/or technical such as for geothermal),
- Etc.

### 3. Opportunities for the harmonization of National policies, legislation and standards

The assessment of opportunities is **based on analysis of best practices** in most advanced countries, relating to 18 different types of action, and of gaps and weaknesses of other countries. The identification of the scope and opportunities for initiatives from African continental and regional institutions is a first step to gradually bridge these gaps and harmonise national regulations.

	Type of action	Possible initiatives at regional level	Possible initiatives at continental level
1	Framework legislation	A regional regulatory authority can stipulate which obligations should be specified in a national electricity law, to accommodate a regional energy market, or recommend such obligations to be endorsed by the Council of Ministers of the REC. These include: non-discriminatory grid access; promotion of competition; rules on cross-border exchanges; role of the TSO; unbundling; consumer protection; network operations and exchange of information; consistency of tariffs with regional transmission tariffs; etc.	The continental institutions could a) establish a list and brief description of elements of legislation which should be adopted a minima, and b) facilitate exchanges between regional regulatory authorities and regulators' associations.  A guidebook of relevant web sites could also be useful.
2	Electricity sector and market organisation: Corporatisation and privatisation. Unbundling. Competition in generation. Transmission system operations. Third party access and cross-border exchanges.	In each region, the compliance with the regional market rules obliges each member country to adapt the organisation of its power sector, aiming at a target situated between the observed best practice and an average intermediate country.  RECs, and particularly regional regulatory authorities and regulators' associations, will continue to convince their member countries to rapidly adapt their legislation and market organisation, by regularly visiting each country and working through the committees established under the regulator or the pool.	The continental institutions could facilitate the dissemination of information about achievements and benefits of reformed electricity sectors in most advanced countries, as well as exchanges between regional regulatory authorities and regulators' associations.
3	Private Investment in Electricity Generation (and possibly	With the perspective of emerging regional markets resulting from the completion of interconnections around 2018, two neighbouring countries would not maintain radically different market models. The regional regulatory authority	AUC will facilitate exchanges between power pools and regional regulators, with a view of harmonising regulatory frameworks and market rules of regions to be soon interconnected.





	Type of action	Possible initiatives at regional level	Possible initiatives at continental level
	transmission)	will have the responsibility of gradually introducing necessary changes in the regional legal and regulatory framework, one of the objectives being to remove all the barriers to investment for regionally focused power generation projects. Such changes will drive adjustments in the grid code and its application, as well as adaptation of national legislation of the pool member countries.	Exchange of experience is also required on transmission investments, for which some innovative contractual frameworks for new transmission lines and interconnections are being introduced.  AUC should regularly carry out audits of the adjustments introduced in the regulatory frameworks of each power pool, to analyse in detail whether and how specific barriers to private investment have been resolved.
4	Electricity Distribution and retail.	This subject would not appear among the first priorities of a REC, particularly of a regional regulatory authority of regulators' association.	This subject is worth being addressed at continental level, as the viability of distribution companies is crucial for the performance of the whole of African electric power sectors. Required initiatives would include collection of relevant literature and workshops organised around successful cases.
5	Regulatory Authority: establishment, legal powers and responsibilities, activities and experience.	Regional regulators already provide support to newly established regulators. Exchanges should be organised about specific responsibilities, rules or standards, e.g. as part of the agenda of the regular meetings of committees established under the regional regulatory authorities. Regional regulators should have sufficient resources to secure regular meetings of their consultative committees and experts workshops.	Beyond its publications and general guidelines, AFUR should continue to play its role of a forum of national regulators, allowing specific questions raised by a member to be answered by AFUR or by other members, or simply exchange of experience.
6	Statutory and financial independence of the Regulator. Accountability and Ethics.	The regional regulator or regulators' association can initiate "audits" of necessary improvements, or peer reviews. Best practices would be discussed at annual meetings of regulators. Some of the conditions to be fulfilled may be part of regional "directives".	AFUR will continue to provide guidelines and examples, and would sponsor peer reviews, in coordination with the AUC (and regional authorities).
7	Regulatory Authority: staff; resources; published achievements.	Regional regulatory authorities or regulators' associations already assist national regulators, regarding issues related to the implementation of regional markets. Several standards, as well as some tools and software, are worth being implemented within all regulatory authorities belonging to a same region.	Some subjects are worth being taken at continental level, such as standards on quality of supply or security of electrical equipment.  AFUR would continue to publish relevant guidelines. Following its benchmarking of regional regulators, a guidebook for properly organising the functions and staffing a regulator might



	Type of action	Possible initiatives at regional level	Possible initiatives at continental level
			be useful.
8	Infrastructure Development. Strategies, Planning, Financing.	<p>Latest updating of pool master plans and workshops organised about power sector planning at power pool level, have created opportunities for staff of member utilities to learn about methods and software, and for some national to acquire software. Planning committees and working groups will continue to function in each power pool, and learning opportunities need to be maintained for staff of less endowed countries.</p> <p>National regulators also need to learn about their responsibilities with respect to power sector development, under the aegis of the regional regulatory authority.</p>	The role of continental institutions, especially AUC and NEPAD/NPCA, should be seen more from the perspective of PIDA, whereby NEPAD IPPF will provide support to RECs mostly on infrastructure project preparation, rather than regional planning. Exchange of experience would take place between regional power pools, rather than between countries.
9	Tariff fixing and cost control procedures.	Initiatives from regional regulators or other authorities would essentially aim at securing compatibility of tariff setting procedures with transmission tariffs adopted at regional level for cross-border exchanges and wheeling of energy across the power pool.	Methods for cost analysis and tariff setting could be published, for the needs of less advanced countries. As requirements tend to be more specific, staff from regulators would learn only if they can attend fairly long sessions at specialised universities, such as the Florence School of Regulation.
10	Business Plan for the Electricity Sector.	In some cases, there might be justification for using the same model for several utilities: the model developed for the CEB (Communauté Électrique du Bénin) is also used at least by SBEE in Benin, if not CEET in Togo. The regional regulators might find out whether less endowed countries would be able to learn from a business plan developed in another country.	Continental authorities should promote the obligation for African electricity companies to develop business plans based on financial simulation models, as an indispensable tool, among others, to introduce rational tariffs.
11	Licensing and market monitoring.	<p>Licenses of transmission system operators and for major generators have implications on the regional market, and therefore should be fully compatible with regional market rules, grid code and operations guidelines. So do the national market rules and grid codes.</p> <p>Regional market rules, operations guidelines and grid codes have been elaborated by specialised committees attached to the regional power pool, and would continue to be improved by these committees, under supervision from the regional regulator and from the competent council of ministers of the REC. This contributes to securing</p>	<p>The AUC would be responsible for supervising the harmonisation of regional market rules and grid codes at continental level, as discussed in the chapter on the assessment of regional and continental institutions.</p> <p>An institution like AFUR would provide examples of licenses and contracts to be taken as models by national regulators.</p>



	Type of action	Possible initiatives at regional level	Possible initiatives at continental level
		<p>the compatibility of national regulations with regional rules.</p> <p>Each regional regulatory authority is therefore responsible for harmonising national rules, so that they are consistent with regional rules.</p>	
12	Public Service Standards.	Providing support to national regulators is part of the agenda of regional regulatory authorities and regulators' associations, although it would not be their first priority. Regional regulators may organise exchanges and workshops through specialised committees.	A five-year programme should be established together by AFSEC, AFUR and other relevant institutions, to deal successively with different standards, depending on priorities to be jointly established by AFUR members.
13	Consumer protection and dispute settlement.	Dispute resolution is on the agenda of regional regulatory authorities or regulators' associations, however regarding mainly the regional electricity market.	Guidelines could be elaborated by AFUR, relying on experience of some more advanced countries.
14	Facilitation of Electricity Access via grid extensions and off-grid solutions.	<p>Pilot peri-urban electrification programmes were carried out at regional level, e.g. funded by an EU RIP, with positive results in spite of encountered difficulties.</p> <p>Regional regulatory authorities would contribute to facilitate cross-border MV electrification by encouraging neighbouring countries to harmonise their respective regulations and sign MOUs.</p> <p>The subject is also on the agenda of ECREEE. This will be the case for EACREEE and SACREEE in the future.</p>	The role of continental institutions would essentially consist of facilitating the dissemination of information about successful solutions and projects.
15	Electricity access: specific cases of mini-grids and stand-alone systems.	<p>When the council of energy ministers of a REC has agreed on common market rules, these might include a component dedicated to off-grid solutions, especially mini-grids.</p> <p>The subject is on the agenda of ECREEE, regarding for instance the development of mini-grid RE technology, and will be on the agenda of EACREEE and SACREEE.</p>	Continental authorities could facilitate exchange of experience between African countries, as well as the publication of guidelines or other documents about mini-grids and stand-alone systems.
16	Electricity generation from renewable energy and self-generation.	ECREEE has developed a renewable energy policy for West Africa / ECOWAS. RCREEE facilitates exchange of information and experience between Southern and Eastern Mediterranean countries. These examples are likely to be followed in other African regions, e.g. with the creation of SACREEE.	Exchanges between African regions are necessary, as the experience of Kenya or Tanzania is valuable, for instance, for West African countries. Such exchanges need to be coordinated at the level of the AUC.



	Type of action	Possible initiatives at regional level	Possible initiatives at continental level
17	Renewable Energy: Strategy and Legislation. Institutions. Financing and financial incentives	<p>Initiatives from ECREEE encourage governments to develop and adopt strategies and action plans in favour of RE development. ECREEE is implementing several regional programmes, including on Sustainable Energy Policy; SE4ALL; Project Development and Finance; Capacity Building and Knowledge Management; Bioenergy; Climate Change; Solar Thermal; Small Hydro. Its actions induce benchmarking and peer review among countries.</p> <p>RCREEE as well facilitates exchanges about best practices among Southern and Eastern Mediterranean countries.</p> <p>These models will be followed by similar RE and EE institutions being created in other African regions.</p>	<p>AUC would need at least to secure or monitor coordination between regional initiatives and regional centres for renewable energy and energy efficiency, e.g. for those which are being set up to benefit from experience of RCREEE and ECREEE.</p> <p>Exchanges are worth being organised at continental level.</p>
18	Energy Efficiency: Strategy, Legislation and Standards. Institutions. Financing and financial incentives.	<p>ECREEE is implementing several regional programmes, including on Sustainable Energy Policy; Energy Efficiency; Clean Cooking; Capacity Building and Knowledge Management; Climate Change. The formulation and implementation of these sub-regional policies benefited from the experience and support of some ECOWAS member countries.</p> <p>Exchange and mutual support between countries within a region is necessary to make progress in regulations and develop new EE markets.</p> <p>There have been several attempts to jointly develop standards, codes or labels at the level of several countries (Southern and Eastern Mediterranean countries, ECOWAS, etc.). Such programmes benefited to countries where Governments were more receptive and dedicated more resources.</p> <p>Such experiments need to be re-conducted and enhanced, provided that they receive a continuous support from institutions like ECREEE, and that they do not depend on annual or multi-annual budgets of development partners.</p>	<p>AUC would need at least to secure or monitor coordination between regional initiatives between regional centres for renewable energy and energy efficiency, e.g. for those which are being set up to benefit from experience of RCREEE and ECREEE.</p> <p>Exchanges are worth being organised at continental level. Owing to its experience on standards, AFSEC should play a significant role.</p>



#### 4. Preliminary conclusions :

Considering their mandate and powers, the **roles of Continental Institutions** would essentially consist of awareness, information, advices, exchange of information and experience, workshops, publication of guidelines and guide books, and for some actions carrying out audits. AFUR represent a good example of continental institution and has published Quality of Service Guidelines and continues to support members in regulatory capacity building while AFSEC has been continuing with a standards (related e.g. to quality of electricity supply and electrical risks) development process. But the guidelines and standards issued by these important sector continental bodies are non-binding on members as they do not have the force of law.

The AUC should take initiatives for the harmonisation of contracts related to energy exchanges, network connection and access, and for the promotion of sustainable solutions for private sector investment in power generation, transmission and distribution. AUC may also have to secure and monitor coordination between regional initiatives and Regional Centres for RE&EE, and benefit from experiences of existing centres.

**Regional organizations** may have the same information roles and also have an important required role for contracts and tariffs, market rules and grid codes to convince their member countries to adapt their legislation and regulatory framework. They will have to gradually introduce necessary changes in order to remove all barriers to their regional markets. Several standards, as well as some tools and software, are worth being implemented within all regulatory authorities belonging to a same region. Regional inputs are also required for national legislation and power sector organisation, and for RE.

**National level:** There have been several attempts to jointly develop standards, codes or labels at the level of several countries. Exchange and mutual support between countries within a region is necessary to make progress in regulations and develop new electricity, RE and EE markets

#### 5. Recommended actions and priorities

The recommended actions concerning **the regulatory frameworks, policies and practices** are presented in the report according to 18 types/ themes of actions:

1. Framework legislation.
2. Electricity sector and market organization: Corporatization and privatization. Unbundling. Competition in generation. Transmission system operations. Third party access and cross-border exchanges.
3. Private Investment in Electricity Generation (and possibly transmission).
4. Electricity Distribution and retail.
5. Regulatory Authority: establishment, legal powers and responsibilities, activities and experience.
6. Statutory and financial independence of the Regulator. Accountability and Ethics.
7. Regulatory Authority: staff; resources; published achievements.
8. Infrastructure Development. Strategies, Planning, Financing.
9. Tariff fixing and cost control procedures.
10. Business Plan for the Electricity Sector.
11. Licensing and market monitoring.
12. Public Service Standards.
13. Consumer protection and dispute settlement.
14. Facilitation of Electricity Access via grid extensions and off-grid solutions.
15. Electricity access: specific cases of mini-grids and stand-alone systems.
16. Electricity generation from renewable energy and self-generation.



17. Renewable Energy: Strategy and Legislation. Institutions. Financing and financial incentives
18. Energy Efficiency: Strategy, Legislation and Standards. Institutions. Financing and financial incentives.

For each of these types/themes of action, tables/sheets are detailed in the report, with the following items:

1. Description of the best practice to be considered as a possible target (most advanced countries)
2. Available documented references
3. Intermediate countries: gaps, weaknesses and required steps
4. Less advanced countries: gaps, weaknesses and required steps
5. Tasks to be carried out preferably at national level
6. Required initiatives at regional level
7. Required initiatives at continental level

**Groups of recommended actions and priorities:**

On the basis of the analysis of countries and regions, actions have been identified, at regional and continental levels, to support the harmonisation / convergence of regulations. For this purpose, regional and national types of action have been grouped into 11 homogenous groups of actions.

The relative importance of the 11 groups of actions is proposed in the following table with indication of level of required actions.

	<b>Group of actions</b>	<b>Priority</b>	<b>Importance of required effort / resources</b>	<b>Required input from regional institutions</b>	<b>Required input from continental institutions</b>
<b>1</b>	Regional Legislation and Regulation	High	Moderate	Significant	Significant
<b>2</b>	Governance and experience of the Power Pool and of the Regional Regulatory Authority	Medium	Moderate	Limited	Limited
<b>3</b>	Market rules and grid codes	High	<b>Important</b>	<b>Important</b>	Moderate
<b>4</b>	Contracts and Tariffs	High	<b>Important</b>	<b>Important</b>	<b>Important</b>
<b>5</b>	National legislation and power sector organisation	High	Important	<b>Important</b>	Significant
<b>6</b>	Public private partnerships	High	Significant	Significant	<b>Important</b>
<b>7</b>	National regulators and public service standards	Medium	<b>Important</b>	Limited	Significant
<b>8</b>	Infrastructure development planning and implementation	Medium	<b>Important</b>	Significant	Limited
<b>9</b>	Electricity Access	High	<b>Important</b>	Limited	Limited
<b>10</b>	Renewable Energy	High	<b>Important</b>	<b>Important</b>	Limited
<b>11</b>	Energy Efficiency	Medium	Significant	Significant	Limited



- The AUC should lead initiatives to strengthen the legal and regulatory framework for regional electricity markets. New legislation / regulation required at regional and national levels.
- The AUC should take initiatives to harmonise contracts related to energy exchanges and network connection and access, and coordinate development of transmission tariffs.
- The AUC should promote sustainable solutions for private sector investment in power generation, in electricity distribution and retail supply, as well as in transmission.
- Some harmonisation of standards, related e.g. to quality of electricity supply and electrical risks, will have to take place at continental level (AUC, AFSEC and AFUR).
- Regional power pools and regional regulators will continue to improve grid operating guidelines, market rules and grid codes. AUC will facilitate adjustments of rules between SAPP, CAPP and EAPP.
- NEPAD IPPF will provide assistance to the RECs on interconnection project preparation. Some power pools also require strengthening of their resources.
- Energy Access will be facilitated by all actions to be undertaken by regional and continental institutions.
- For the development of renewable energy and the promotion of energy efficiency, RCREEE, ECREEE, followed by SACREEE and EACREEE, will play a major and increasing role.

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