

# Regional Integration of African Electricity Markets

## 1 Background

Due to the nature of power generation, it often so happens in Africa that the most cost effective, efficient and environmentally friendly sources of energy are not necessarily situated in the same country where the demand for that power is.

Thus the DRC, for example, holds great promise as a generator of hydro electric power, but local demand is too small to justify full development of its potential. In the absence of trading mechanisms and infrastructure to accommodate sales of power to other countries both the selling country and purchasing country thus loses out on the opportunity to grow their respective economies and in the process help alleviate poverty.

Accordingly it is of great importance that regional trade in electricity be encouraged. Traditionally bi-lateral trade between neighbouring countries have taken place to the extent that this was possible with inter-connected infrastructure. However, such trade seldom exceeded a one-on-one relationship. This changed with the advent of regional power pools such as SAPP (the Southern African Power Pool) and more recently, WAPP (Western African Power Pool), as well as initiatives North and East Africa. .

WAPP has been created to integrate the national power system operations of the Western African Region into a unified regional electricity market - with the expectation that such mechanism would, over the medium to long-term, assure the citizens of ECOWAS (Economic Community of Western African States) a stable and reliable electricity supply at affordable costs. According to WAPP ideals, this will help create a level playing field facilitating the balanced development of diverse energy resources ECOWAS for their collective economic benefit, through long-term energy sector cooperation, unimpeded energy transit and increasing cross-border electricity trade.

The Southern African Power Pool (SAPP) was created with the primary aim to provide reliable and economical electricity supply to the consumers of each of the SAPP members, consistent with the reasonable utilisation of natural resources and the effect on the environment. Its vision includes the development of a competitive electricity market in the Southern African region, thereby giving the end user a choice of electricity supply. It also endeavours to ensure that the Southern African region is the region of choice for investments by energy intensive users, thereby ensuring sustainable energy developments through sound economic, environmental and social practices.

Importantly, whilst core members in both instances are the regional utilities, private sector participation is encouraged on the generation side and in the case of WAPP, for example, a Ghanaian IPP of some 300-400MW became a fully participating member in October 2008.

Thus in theory it seems as if regional trade is encouraged and flourishing. However, in reality in the case of SAPP, for example, very little trade has taken place since 2007.<sup>1</sup>

## **2 Constraints to Regional Electricity Trade**

It is worthwhile looking at some of the constraints to regional trading. For the same of convenience these can be divided into policy constraints, legal and regulatory constraints and technical constraints.

### **2.1 Policy constraints**

Lack of regionally similar policies could be a major contributing factor to a lack of regional trade. It helps little, for example, if a generator of power wishes to sell power but a potential recipient of that power is not able to purchase that power as a result of the seller policies of the recipient country.

This can be illustrated by way of example – if the recipient country has a single buyer regime, and that single buyer is unwilling to purchase power from the seller for reasons not linked to price (or because the single buyer for example does not know what its cost of supply is), no power will flow, regardless of the fact that mechanisms such as WAPP or SAPP exist.

Furthermore, recent power shortages in Southern Africa have resulted in more inward-focussed policies looking towards own generation from a security of supply perspective. Whilst this is understandable, care should be taken that short term security of supply issues do not unjustifiably dictate to common sense and long-term economic gains.

### **2.2 Legal and Regulatory Constraints**

Whilst most of the regional legislation at a high level is conducive to regional trade, in practice much of the substance that will facilitate regional electricity trade is not in place.

#### **2.2.1 Cross-border licensing regime**

Essential for the development of regional markets would be conducive legislation and sub-ordinate legislation that do more than pay lip-service to regional trade. Currently no official cross-border licensing regimes exist, and imports and exports of electricity are dealt with in terms of the different legal regimes of the different countries.

This can become restrictive as Africa has a wide variety of languages and legal cultures that deal differently with legal concepts and issues. For example, a concession-type approach is very different to a permission-based approach.

However, regional initiatives such as RERA has recently initiated steps to formulate a cross-border licensing regime which should go some way towards addressing common licensing issues of SADC countries.

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<sup>1</sup> Most likely as there was no surplus of power to trade, or the pool for a variety of reasons was not the mechanism of choice in trading.

## **2.2.2 Different legal regimes**

Whilst it is natural that different countries have different legal regimes, this is not really helpful for the facilitation of regional trade. This also holds true for legal process- issues. For example, trade may be hampered between countries where the legal system is such that it is difficult to enforce agreements.

This can be expanded to the realm of regulation, where different regulatory practices could result in restraint to trade. Tariff methodologies and setting is particularly important. If one country sets cost reflective tariffs and the other does not, chances are that the utility of the country not setting correct tariffs will not be able to afford electricity purchases, or may not be able to sustain payment of liabilities incurred.

Furthermore, if utilities do not even know their own cost of supply, prices offered may be unrealistic and discourage regional trade.

## **2.3 Technical constraints**

Technical constraints are often cited as some of the more obvious constraints hampering regional electricity trade. If the regional interconnectors do not exist, trade will not take place.

However, it often goes further than that and also includes issues such as different technical standards in different countries and different transmission and distribution codes.

If one country is not in a position to adequately maintain infrastructure, wheeling also becomes impossible or technical losses becomes problematic.

Often there is a lack of understanding by the wheeling countries of the intricacies involved in regional trade, and who should accept responsibility for issues such as transmission losses.

## **2.4 Internal trading constraints**

Whilst SAPP and WAP are a great step forward in promoting regional trade, some of the rule of these bodies can be restrictive in their own right. For example, SAPP provides for private sector membership, but only at generation level. Thus on the purchase side members are still only the different utilities in the country, whilst possible other large clients exist that may want to use SAPP as a trading platform.

# **3 Addressing legal and regulatory constraints**

## **3.1 Policy constraints**

Uniform regional policies that facilitate cross—border trade should be strived for. In this regard especially two issue stand out –

- The use of single buyer regimes and the possible negative effect this may have on free electricity; and
- The current inward-looking focus as a result of security of supply concerns.

Both these issues should be seen for what they are and possible mitigating effects investigated. For example, single buyer regimes may be modified to allow for some direct sales (e.g. to large customers) whilst security of supply issue should be seen more from a short term perspective than a long term problem.

### **3.2 Legal and Regulatory Constraints**

In this context, especially the lack of detail and implementing legislation setting out regional trade issues (e.g. cross-border licensing regimes) and the vast differences in legal regimes and enforceability of contracts seem to stand out.

This is augmented by the often different tariff regimes, where in one country tariffs may be cost reflective but in another country not.

AFUR should continue playing a meaningful role in facilitating conducive legal and regulatory regimes, for example by developing *pro-forma* cross-border licensing regimes that its members can adopt, or ensuring that the tariff methodologies used in the different countries are broadly aligned.

### **3.3 Internal Pool Constraints**

Internal pool constraints should be addressed. Often this cuts across policy issues, for example by determining that sales could also take place to large customers, and not only to utility members.

Whilst politically perhaps somewhat difficult, there is no reason why this cannot be done. However, in itself it will have little effect if the relevant country policies and legal and regulatory regimes are also not adopted to facilitate trade. It will have little use if the SAPP rules, for example, determine that IPP members can sell to large customers but a restrictive single-buyer regime in the country of destination prohibits this, 3<sup>rd</sup> party access to infrastructure is not allowed or transmission use of system charges are not conducive.