

Experience and difficulties encountered in electricity infrastructure regulation across Africa

1 Introduction

As mentioned in the AFUR CONCEPT NOTE: PRO POOR REGULATION, MEETING THE MDGS FOR INFRASTRUCTURE SERVICES IN AFRICA, there is widespread recognition that the lack of adequate economic infrastructure in electricity, telecommunications, water supply, sanitation, roads, urban and inter urban railways, ports, and social infrastructure is a key constraint to economic growth and competitiveness, as well as to poverty reduction.

Sub-Saharan Africa (SSA) is trailing behind other regions in terms of infrastructure service quality and delivery: only 30% of the African population have access to electricity, compared to 75% for other Less Developed Countries (LDCs); access to water and sanitation is about 65% in SSA against 80.0% for other LDCs; access to roads is 34% in SSA compared to 50% for other LDCs, while the penetration rate for telecommunication is less than 13% compared to world average of 40%.

The world is midway between the 2000 MDG Declaration and the target date of 2015 by which the Millennium Development Goals (MDGs) are expected to be achieved. The MDGs represent the development aspirations of the world as a whole; and there is unprecedented agreement by the international community to monitor progress towards reducing income and non-income poverty through quantitative, time bound targets that are to be achieved by 2015, from their levels of 1990. The MDGs include 8 goals divided in targets and indicators. They are aimed at: halving income poverty and hunger; achieving universal primary education and gender equality; reducing under-5 mortality by two-thirds and maternal mortality by three-quarters; reversing the spread of HIV/AIDS; and halving the proportion of people without access to safe water; stopping environmental degradation; and promoting a global partnership for development.

The objective of this paper is to explore the challenges and difficulties faced by electricity regulators on the continent, and especially sub-saharan Africa, in regulating electricity infrastructure from a developmental point of view.

2 Approaches on Infrastructure Development

Historically, the electricity supply industry (ESI) was traditionally considered to be of “strategic” or “national interest”, with the consequence that ESI infrastructure was for the most part of the 20th century organized as public monopolies, with ESI services provided by state-owned utilities.

The objective was to make infrastructure work for both economic growth and social development, and a widely held belief was the Government was the only party that could supply these services equitably and at low cost.

However, in the late 1980s and early 1990s, the model of state-owned utilities proved inefficient for a number of reasons, including amongst others, political interference, bad investment decisions, low productivity, plethora of staff, huge deficits covered by tax payers, low and often poorly paying customer base, and poor service delivery.

The perception of the inefficiency of public monopolies was aggravated by the new thinking that weighed more heavily on the side of market forces. There has been a shift towards both private management (private sector participation) and private ownership (privatization) of the ESI as well as the competitive provision of services within parts or all of the ESI (particularly generation and distribution), often under the endorsement and the pressure of international development institutions. The objectives of this new orthodoxy were to promote private investments, and efficiency through better service delivery, competition, and sound regulation. [However, the Public sector continued to play a major role until today in electricity supply industry in Africa because the African countries were not really committed to privatization except as a response to pressure from development institutions such as the World Bank.](#)

In Africa, a number of countries thus established regulators, either dedicated to the regulation of the ESI or combining such regulation with the regulation of other areas such as water or other energy sources. Competition and privatization became the flavor of the moment with widely held beliefs that a magical solution had been found for the woes of the industry. True to the initial concepts, regulators primarily focused their attention and energies on the protection [of private sector investment and, to a lesser extend,](#) of the end consumer, with less regard to issues such as determining the need for new generation or facilitating cross-border trade, as in a competitive market these aspects were mostly supposed to address these issues in any event. [The role of the regulators in Africa focused on national electricity issues in accordance with their mandates. It is only recently with realization of the importance of regional integration that cross border trade and regional energy markets are being talked about but very little has happened in orienting the regulators to facilitate regional integration of the energy systems in Africa. This is an area in which AFUR has to start playing a key role beyond just dissemination of good practice among its members.](#)

The blue print of infrastructure privatization and liberalization did not play out as expected. Almost 20 years after the launching of waves of privatization in Africa, there are concerns and disappointment over the impact of the privatization process particularly with respect to investment and service delivery.

During the 1990s, many in the international development community viewed assistance for infrastructure with considerable skepticism. They contended amongst others that: though important for economic growth, infrastructure investment had little relevance to poverty reduction; actual benefits from infrastructure were significantly less than anticipated; weak governance and institutions gave way to corruption, distorted public investment choices and neglected maintenance, thereby lowering infrastructure's contribution to economic growth and diverting benefits intended for poor people.

As a result, all sources of infrastructure funding have fallen dramatically since the mid-1990s. The widely held belief that private investment in infrastructure would increase also proved incorrect. Private investment has been limited in terms of volume, sectors and countries – especially in sub-Saharan Africa.

This has led to a situation where new infrastructure developments are urgently needed in the ESI but where it seems not to be forthcoming, or not to be forthcoming quickly enough to avert disaster.

There is no doubt that regulators can and should play a meaningful role in facilitating investments in the ESI. However, in order to do so, due cognizance needs to be taken from the experiences of the past.

3 Difficulties with Historic Approaches to Infrastructure Development

In cases where privatisation did take place, it soon became clear that this often was not a simple answer to problems. In particular, it was found to have little relevance for poverty reduction, and proclaimed benefits did not realise. [The narrow view of looking at failure of privatization to contribute to poverty reduction is when it is judged purely on the number of the poor having access to electricity as against contribution of electricity to long term economic growth resulting in employment and income generation. The problem was always a failure to support long-term approaches to infrastructure development other than judging success on a short term basis.](#)

Linked to corruption, poor governance and a mind-set that was simply not oriented towards competition, this led to poor service and disillusioned customers. Similarly, investment choices were not necessarily made on need but sometimes distorted. Maintenance was neglected and there was a perceived or real bias against the poor.

The privatisation model on its own was thus not the answer, at least not in the manner in which it was implemented.

In some countries, this led to a backlash and a slow-down of privatisation efforts. In some countries it even led to a reversal of policies.

Whilst privatisation was never completed in South Africa, for example, Government was far advanced towards a competitive multi-market model as late as 2003. Fears of the consequences of privatisation and a new belief in the power of the State to provide for the public good led to a policy reversal and the state-owned utility re-affirmed as the countries' single buyer and developer of the majority of its present and future ESI infrastructure.

Nevertheless the change back to a more state-focussed approach did little to avert an electricity crisis in South Africa as the blackouts of early 2008 testified. This has led to

wide-spread panic in the region as most countries directly or indirectly are affected by what happens in South Africa. To date the new policy direction has yet to demonstrate that it will result in significant and timeous new infrastructure development. Similarly, Government led efforts in most SADC countries have also had scant results, which means a workable solution still seems elusive.

A compromise or pragmatic solution or solutions may be more advantageous than either a privatisation or a government-led approach, especially over the shorter term. There is growing support for such an approach, as evidenced by the AFUR Core paper. These solutions can take many forms, but are typically a combination of State and private sector involvement, i.e. a sharing of benefits and responsibilities by both the Government and the private sector in or other manner (PPP arrangements, concessions, some reservation of new generation for the private sector etc).

Consequently, it can be expected that regulators will more and more be faced with models that are some form of hybrid between private sector and government-led approaches. In dealing with these hybrids, regulators need to be cognisant of existing and probable new regulatory challenges and be able to address them.

4 Problems in ESI Infrastructure Regulation

4.1 Policy constraints

Government policy underlies the legal and regulatory framework governing the ESI. Typically, whilst regulators are independent, policy formulation remains the domain of the State, and changes in policy impact on the manner in which regulators function. Thus any constraints in the policy formulation process also have an impact on regulation. Governments in Africa are typically faced with the following constraints in the policy formulation process:

- Lack of capacity - experience and skills.
- Lack of financial resources or resources not availed on time.
- Lack of stakeholder buy-in.
- Unofficial policy changes or inconsistent policy implementation.
- Lack of political will.
- Limited implementation capacity.
- Inadequate institutional sector coordination.
- Lack of investor interest.
- Time lags between policy formulation and development of the enabling laws.
- Policies encouraging non cost – reflective tariffs.
- Insufficient incentives to attract new investment and private sector participation.
- Lack of awareness of the national policy amongst key stakeholders (policy not communicated to the relevant investors and public).
- Resistance to change.

It can be noted that ESI policies in Africa are generally in line with international practices and trends. However, policy updates are not necessarily being done regularly, and there

are a lot of inconsistencies between what is stated as part of the policy and what is actually implemented.

In Southern Africa, this is compounded by a shift from a regional view of least cost projects to a self sufficiency mindset, with more focus on local in-country generation rather than relying on imports, even if these were cheaper. As development of local generation capacity is often not the least cost option, this may very well result in much higher future electricity prices, which in turn may have a negative impact on the competitiveness of the region.

4.1.1 Energy Planning

In most countries energy (and electricity) planning is the responsibility of government, the utilities and regulators. However, in most cases there is no clear role differentiation. There are overlaps between various institutions (e.g. government, regulator and utility) and also between planning and implementation.

Most planned projects are too big and ambitious for local country markets with most countries not having the capacity or will to fund or guarantee loans required to finance these plans.

Often no one assumes responsibility for important decisions with resultant political consequences and far reaching financial and practical implications. Project negotiations with governments take too long resulting in eventual breakdown of negotiations and loss of potential investor interests. This is linked to the fact that the ability to raise project finance is limited as most of the power projects are capital intensive.¹

On the other hand, some projects have not been successful as they have not been presented as bankable projects. It is important to note that most countries and/or utilities in Africa currently lack the capacity to develop projects to a bankable level and hence the general failure to successfully implement plans.²

4.1.2 IPP Policy

Most sector policies in Africa in some way or another do promote private sector participation, especially at generation level. However, very few countries have well defined IPP policies or frameworks with specific targets that can provide comfort to

¹ For example, there has been no major new investment in the SADC ESI despite the:

- Forecast by SAPP indicating diminishing generation surplus capacity, as far back as 1999.
- Two regional investment conferences that took place in Zimbabwe (2001) & Namibia (Sept 2005) focussing on the imminent crisis.
- One round table meeting with investors/ lenders in Republic of South Africa (RSA) (Nov. 2005).

² The Development Bank of Southern Africa (DBSA) has indicated that project preparation is critical to investor uptake of projects. The DBSA and other international financial institutions have set aside funding to assist project sponsors to develop projects to a bankable level.

private investors and address country specific problems. There are also no frameworks to provide clear processes, requirements and conditions for potential investors and issues such as restrictive labor laws, tax regimes, fiscal issues and land tenure lead to project implementation difficulties.

The extent and payoff of ESI reforms have been limited and in most countries the national utilities retain dominant market positions; serving for example as single buyers and maintaining own generating plants.

Private sector participation is either temporary or marginal for example through IPPs that are typically contracted to the state owned national utility.

As part of reform, some of the established power utilities have changed status from *sui generis* statutory bodies to corporates wholly owned by government. Whilst this has brought a change in status and often tax and dividend benefits to the relevant governments, it has also led to a removal of more direct government influence and oversight into these monopolies. The main reason why utilities have been corporatized is to enhance efficiency and commercialize them in preparation for eventual privatization.

Interestingly, as part of a recent SADC survey, it was found that despite corporatization:

- ✓ There is no significant improvements in terms of service quality, governance and efficiencies
- ✓ Most of the utilities have only implemented partial unbundling with some even reversing the process
- ✓ There is no political will to privatize electricity utilities
- ✓ Corporatization strategies which are spear headed by utility managers are often inward looking and focused on strengthening the position of the organization relative to other role players
- ✓ Whilst remaining vertically integrated, utilities often dominate the market as well as being designated the single buyer (and wholesale seller) of electricity³

As a result the African countries typically have very dominant utilities most of which do not have strong compacts or performance agreements with their respective governments. Where performance agreements do exist, compliance monitoring is absent or not transparent.

4.2 Regulatory constraints

Most of the regulatory institutions in Africa remain fairly weak as most regulators have not been established for long, and are hindered by a lack of capacity and adequate funding. Some of the longer established ones have been plagued by skills flight and lack of autonomy.

³ 2008 SADC Survey on the “Status of Policy, Institutional and Regulatory Frameworks of the Electricity Supply Industry (ESI) in the Southern African Development Community (SADC) Region”.

Regulators are typically responsible for the oversight of the power utilities in the following areas:

- Granting of licenses
- Approval of tariffs
- Approving and monitoring investment plans
- Market oversight and rules
- Establishing technical and minimum service levels
- Monitoring and enforcing compliance with regulation.

Where regulators do not exist, it is normally the responsibility of the relevant ministries to grant licenses and provide the oversight functions for the ESI.

One of major problems faced by regulators in infrastructure regulation is newness and lack of the requisite skills to carry out their full functions. Lack of capacity also affects the government ministries where these are responsible for the regulatory function.

Importantly, this often results in utilities being self regulating in one form or the other.

4.3 Tariffs and pricing

In most countries residential and large customers' tariffs are regulated. Generally, utilities feel that tariffs are too low to sustain viability whilst governments and regulators often believe they are adequate.

The type of economic regulation methodology used for each of the different segments of the ESI differs.

In the SADC survey⁴, it was found that tariffs *are not sustainable and do not give sufficient signals to ensure future investments and efficient use of the commodity*.

Whilst this survey was limited to the SADC, it is believed that this will also hold true for most of the remainder of African countries.

In some countries, for example, the cost of supply is not even known – hence no cost reflective tariffs can be set.

4.4 Private sector participation

It has often been stated that private sector participation in the ESI is crucial for new investments in infrastructure.

Whilst third party access to transmission and distribution networks is often allowed in terms of the enabling legal frameworks, in practice, there are many barriers to such access, such as lack of a transmission use of system tariff regime, denial of access by the

⁴ See footnote 3.

incumbent utility for technical and other reasons, the declared or undeclared single buyer regimes and lack of an independent system operator (ISO).

Where IPP's do exist they generally only sell to the incumbent utility, and are by law or in practice barred from selling directly to end customers.

In Southern Africa, potential investors indicated that the following need to be in place to ensure private sector participation:

- Ensure adequate cash flows in the sector
- Adequate tariff levels
- Payment discipline by customers
- Maintain the stability and enforceability of laws and contracts
- Improved responsiveness by governments
- Policy consistency
- Availability of guarantees from governments (where necessary)
- Minimize government interference
- Independence/autonomy of the regulator
- Ability by private investors to exercise effective operational and management control of their investments
- Effective control and oversight over incumbent utility to align with stated policies

5 Pragmatic Approach to Regulation – Issues for Discussion

It is clear from the above that something needs to be done to address difficulties in regulating ESI infrastructure and importantly, encourage new investments. However, it also seems as if no particular philosophy offers an easy solution. Accordingly it may be useful to consider approaches whereby the existing situation is acknowledged, but then “tweaked” to get improvements rather than re-inventing the wheel.

5.1 Policy Considerations

African governments should provide the leadership and drive needed to establish effective and coordinated processes that address key policy issues in an integrated and comprehensive manner.

Governments need to pay greater attention to suitable legislative frameworks in order to guarantee regulatory autonomy/independence and give investors stronger assurance regarding the stability of regulatory frameworks.

In the SADC region, for example (as part of the SADC Energy Protocol to which all member states are signatory), the region needs to work towards the harmonization of national electricity policy frameworks so that complementarities in resources are reconciled with self-sufficiency goals. Essentially, this requires a redefinition of self-sufficiency that puts reasonable emphasis on cross-border supplies. These are often

sensitive matters of political judgment, but it is also true that the more the region becomes practically integrated the greater value that will be placed on sustaining the cohesion of the whole.

These policies should attach sufficient importance and weight to IPP development and private sector development as part of the electricity market structure. For example, the current focus on single buyer regimes with the incumbent often being both the generator and buyer of power (thus competing with potential IPP's) may need to be re-looked at. Fiscal- tax- and employment issues are also often problematic and need to be addressed.

Individual countries also need to take firm decisions and commit to regional policy, e.g. on how the role of the different state-owned utilities should be defined in generation, transmission and distribution, and these should then be aligned to private sector participation.

Lastly, and perhaps most importantly, stated policies should be adhered to and implemented and not substantially changed without proper stakeholder consultation processes.

5.2 Pricing and Tariffs

The basic principle is that electricity utilities need to be financially healthy, charging tariffs to customers that reflect the cost of supply while being held accountable for service quality. At the very least, the average tariff should ensure that the utility is revenue sufficient, which does not exclude cross-subsidies within consumer categories.

Regulators should approach tariff adjustments with the aim of ensuring that the service is sustainable and there are sufficient incentives for system expansion.

An autonomous/independent regulator should be expected to make a more balanced decision than the political leadership which is subject to many social and political pressures. When considering tariff adjustments, a competent regulator should also take into account, not just the purely economic factors, but also broader societal implications.

5.3 Regional Integration and Harmonisation

Greater regional integration is critical and should lead to a bigger market and more efficient system, and effective trading and use of reserve capacity. If the different African regions have harmonised frameworks and approaches to investment in the ESI, both local and foreign investors will be looking at larger markets with reduced risks rather than individual countries. This will create more investor confidence and enhance prospects for investments in the ESI as a whole.

5.4 Updating of Legal and Regulatory Frameworks

Updating of ESI legal and regulatory frameworks to properly accommodate IPP's and private sector involvement in generation, transmission and supply activities is critical. In

some of the African countries ESI legislation is very outdated. In countries where more modern legislation is in place, the focus is not necessarily on involving the private sector.

Via AFUR and other African initiatives the possibility could be investigated to develop “standard” or *pro forma* electricity legislation that would ensure uniform *regional* electricity frameworks. This could apply to technical issues, standards as well as regulatory issues. Whilst individual countries would be free to adopt their own legislation, in reality the *pro forma* legislative frameworks could serve as the point of departure.

Independent, arms length regulators in those countries that do not yet have them and strengthening of the existing regulators need to take place.

Ongoing assistance and support should be provided to regulators to assert their independence and for governments to understand the importance of autonomous decision making in facilitating investment and infrastructure regulation. Organizations such as AFUR could be put to good use as a source of best practice and would help enhance regulatory objectivity.

In most countries existing legislation is mostly of an enabling nature rather than prescriptive with most of the detail largely absent. This is a huge problem for infrastructure development as on the surface the legislation and policies seem to be conducive to private sector involvement but underneath there is no substance. This would need a dedicated and concerted effort to address. Once again *pro forma* licences, licence conditions and codes can be developed and simply be adopted by individual countries. This would go a long way towards ensuring regional uniformity.

5.5 Ongoing Support

A concerted and consistent effort should be made to support governments and regulators to formulate, review and implement policies. In particular, efforts should be focused on assistance (financial assistance and professional support) to those organizations that will probably make the most difference in encouraging private sector involvement. Once policies are accepted and put in place by governments, the task of implementing them will fall on the different government departments and the regulators. In most of the countries, competency and know-how at the implementation level is severely lacking, and it is doubtful if scarce skills can be built up over the short to medium term. Care should be taken that assistance is offered in such a manner that it is sustainable over the longer term.