

Energy Security and the Quest for Self-sufficiency

1.0 Introduction

SOUTHERN AFRICA has over the past two decades outlined its energy strategy and policy in several documents such as the SADC Protocol on Energy (1996), the SADC Energy Cooperation Policy and Strategy (1996) and the SADC Energy Activity Plan (2000).

Although now out of date and already under review, the policy framework does at least encourage a regional approach to the development of the energy sector. However, this approach has hitherto not been backed by actual actions on the ground as Member States often opt for what may seem easier options in the short term in light of current shortages, options that could actually be insufficient in terms of addressing the long term energy needs of the region.

2.0 The Prevailing Context

The Southern African Power Pool (SAPP) advised as early as 1999 that demand for power in SADC was increasing faster than the growth in generation capacity. It warned that the region would face crippling shortages by 2007 unless immediate action was taken to invest in new generation capacity.

SAPP's counsel came against a backdrop of no major investments in southern Africa's power sector in the last 20-30 years.

Regional average electricity demand growth is currently estimated at about five percent per annum against a low off-take of projects to boost power generation. This has resulted in load shedding in most SADC countries.

Electricity demand growth in SADC

No.	Country	Utility	2009 Peak Demand [MW]	2010 Peak Demand [MW]	Demand Growth [%]
1	Angola	ENE	668	724	8.4%
2	Botswana	BPC	503	553	9.9%
3	DRC	SNEL	1,028	1,081	5.2%
4	Lesotho	LEC	116	121	4.3%
5	Malawi	ESCOM	260	260	0.0%
6	Mozambique	EDM	435	501	15.2%
7	Namibia	NamPower	451	449	-0.4%
8	South Africa	Eskom	35,850	36,705	2.4%
9	Swaziland	SEC	200	204	2.0%
10	Tanzania	TANESCO	705	802	13.8%
11	Zambia	ZESCO	1,498	1,500	0.1%
12	Zimbabwe	ZESA	1,403	1,469	4.7%
TOTAL SAPP			43,117	44,369	2.9%
Total Interconnected SAPP			41,484	42,583	3.1%

Note: ZESA had suppressed demand, otherwise its peak should be 2000MW

Source: SAPP

As a stop-gap measure, SAPP has promoted the use of demand-side management (DSM) policies that have to some extent succeeded in restraining overall demand in the region. For example, the growth in peak demand was minus one percent in 2008 as compared to 2007.

On the basis of current load forecast, and barring any DSM measures, the SADC region is set to continue with the precarious generation deficit until 2014 when the situation should ease, provided planned generation projects are implemented on time.

Besides DSM measures, SADC has also pushed for energy infrastructure investment and development over the past few years.

Most energy projects have a long lead time, especially the bigger, regional ones that can take anything up to seven years from when construction of plant commences to when users can switch on lights in their homes.

3.0 The Challenges and Opportunities

The lengthy period it has taken before meaningful investment has gone into power projects of regional significance and the start-and-stop pattern of projects identified so far would suggest that there are numerous challenges facing a regional approach to energy development.

Quite evidently, the biggest such challenge has to be the national versus regional interest conundrum. This can manifest as a result of many factors. Power shortages can easily be a political hot potato, especially around election time. Thus as consumer pressure mounts at home, the tendency is often to be inward looking, going for the smaller projects that are less complex and have a shorter lead time. But is that always the best option?

In a proposed Pool Plan based on different scenarios and with a planning horizon stretching to

2020, SAPP has underscored the benefits arising from pursuing projects collectively as a region rather than as individual Member States.

Going this route would not only result in better coordination and optimization but total cost savings of up to US\$48 billion over the planning horizon.

The second challenge is lack of the much-needed political champions and a mismatch of prioritization among the Member States involved. Implementation of identified projects has been slow to the extent that some have become moribund due to a number of political hurdles.

For example, the Malawi-Mozambique interconnector which has been a priority project for many years and had secured funding from the World Bank eventually had the funding withdrawn in 2010 due to a mismatch of prioritization on the part of the two countries involved.



The 3,500 Megawatt (MW) Westcor Power Project which was initiated by five countries -- Angola, Botswana, DRC, Namibia and South Africa -- to draw power from Inga in DRC was fraught with many legal and political hurdles until it was eventually terminated in 2010.

A third challenge for regional power projects is related to concerns over contract security and transmission security, that is, from the source of the power or over the wheeling infrastructure in third countries. Paying for power from a neighbouring country is one thing, getting it as and when it is exactly needed can be another thing altogether as this is subject to several other factors.

Electricity-deficient countries usually have no control over the transmission infrastructure in other Member States but through which their own imports pass. For example, South Africa cannot control what happens along the regional grid when it imports electricity from the DRC, although it is presupposed that this is the responsibility of SAPP.

The recent guidelines developed by the Regional Electricity Regulators Association (RERA) and approved by energy ministers in Angola in 2010 provide a viable opportunity to smoothen cross-border power trading in the region. Although SAPP has so far satisfactorily dealt with wheeling imbalances as and when they have arisen, Member States need to implement RERA guidelines if most of the transmission-related concerns are to be holistically addressed.

A fourth challenge is that of off-take agreements in a market that is dominated by ESKOM. An off-take agreement ensures that a buyer is willing to purchase future power produced by the supplying company or utility. Many times suppliers in the energy industry use off-take agreements to ensure that their investments in power plants are guaranteed sustainability. And off-take agreements are a necessity to secure outside financing.

A case in point is the Mmamabula Power Plant in Botswana. Originally meant to be a regional initiative initially expected to add 1,200 MW of power to the SAPP grid through the construction of a coal-fired plant near the border with South Africa, the project has now taken a rather narrow national focus. Due to complexities associated with off-take agreements and stung by power shortages at home, Botswana has for now down-sized the project to produce 300 MW for the domestic market only.

Last but not least, another challenge impeding a regional approach to energy projects is to do with legal hurdles relating to financing of the projects. This is partly to do with the fact that different Member States have vastly different regulatory

environments and that there is no regional entity in southern Africa that can sign financial agreements on behalf of Member States involved in any given regional project.

A case in point is the Zimbabwe-Zambia-Botswana-Namibia (ZiZaBoNa) transmission line which links the four countries. While SAPP is currently providing management and coordination roles, the responsibility to raise financial resources has been left to the four individual governments. The success of the project is therefore at the mercy of the capacity of the individual Member States to raise the needed resources.

4.0 Conclusions and Recommendations

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Overall, the quest for regional energy security in SADC has always involved a delicate balance between national and regional interests. Amid acute shortages, Member States have tended to take the sovereign route of attempting to attain national self-sufficiency, rather than depending on supply from another country.

The attraction is usually the shorter gestation period for national projects compared to the larger regional energy facilities that often include several countries and involve elaborate negotiations among the beneficiary states and with potential financiers.

However, this approach which is solely motivated by parochial interests is against the spirit of regional integration and therefore not in the long term interest of the region.

4.2 Recommendations

- The SADC Secretariat should be more proactive and be capacitated to play a more catalytic and mediatory role in regional power project implementation to shake off political bottlenecks as well as anticipate and deal with such hurdles before they become too serious;
- The SADC Secretariat and SADC institutions such as SAPP and RERA should be mandated to enforce compliance with regional commitments, including penalties for non-compliance;
- Member States need to speed up power sector reforms including adopting common regulatory frameworks to address concerns about transmission infrastructure security and make contractual enforcement easier for cross border trading; and
- As with all regional endeavours, regional power projects need political champions if they are to be stirred through political hurdles and successfully implemented. □