

Helpdesk Research Report

Political economy of energy in southern Africa

Róisín Hinds

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Question

What is the available evidence on the political economy of energy in southern Africa? If possible, identify literature on: the political economy of power trading between southern African countries; regional institutions to facilitate power trading (e.g. Southern Africa Power Pool); and constraints to attracting private finance into regional power infrastructure.

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1. Overview

This rapid review identifies literature on the political economy of energy in southern Africa. Some African states, with encouragement from international donors, have developed regional power sharing arrangements as a strategy to deal with the continent's energy problems (Niyimbona 2005). The demand for institutionalised regional electricity cooperation stems from existing challenges in energy supply and the projected benefits an interconnected power grid and integrated electricity market provide. Power pools aim to balance electrical loads over a larger network, lower electricity prices, and expand access by

encouraging trade and investment in the sector (Hancock 2014). The Southern African Power Pool (SAPP) is the southern African regional electricity grid that allows for regional power sharing¹.

For power pools to be successfully operational, certain characteristics need to be in place, including: developed grid interconnections; adequate generating capacity to meet demands of the pool; a legal framework for cross-border electrical exchanges; and a regional regulation and mechanism for dispute resolution (Niyimbona 2005).

State of the evidence

There is **fairly limited literature** on the political economy of electricity in southern Africa, with some experts commenting that it is a '**seriously under-investigated area of research**'. Much of the available literature on power sharing initiatives is dominated by technical and consultancy papers, which document, for example, utility capacity and energy outage, rather than the political economy dynamics of energy production and use. There is a distinct **lack of academic research** in this area, with much of the existing papers coming from consultancy organisations or energy bodies. There is also much more evidence on the political economy of utilities and energy reform in South Africa specifically, rather than a regional analysis more broadly (See for example Eberhard 2007).

Power trading

The Southern African Development Community (SADC) takes a leading role in the SAPP, coordinating activities among different national electricity companies and facilitating a shared electricity grid and market. The SAPP is comprised of Angola, Botswana, the Democratic Republic of Congo, Lesotho, Mozambique, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. Though considered one of the most advanced power pools in Africa (Mapuin 2013), trade among countries in the region remains fairly limited (Eberhard et al. 2011). South Africa is the dominant player both in producing and exporting electrical energy (Eberhard et al. 2011). Some of the key challenges identified in the literature concerning power sharing arrangements include:

- Overcoming **differences in the capacity and needs** of different member states (Mapuin 2013);
- **Lack of infrastructure and maintenance** which constrains both transmission congestion within transit countries, and at interconnection level between countries;
- **Human resource capacity**, including the impact of HIV/AIDS, is a regional problem and has had an impact on the operation of member utilities (Hammons 2011).

Constraints to attracting private finance

Inadequate financing has hampered effective regional power integration in southern Africa, particularly due to limited investments in generation and transmission infrastructure (Hammons 2011). Both public investments and overseas development assistance will not be sufficient to fill regional and national gaps, demanding enhanced **private sector participation**. However, there are some factors identified in the literature as placing constraints on attracting private capital, including the historic poor performance of utilities (ECA 2009), and a lack of agreement among states in key priorities and needs for investment (Eberhard et al. 2011). Some experts caution against privatisation of energy providers and call for the

¹ Power pools have been developed in other sub-Saharan African regions: the East African Power Pool, the West African Power Pool, and the East African Power Pool.

development of a more inclusion electricity system that includes government accountability, pro-poor planning, and the development of community-level electricity services (Hathaway 2012; McDonald and Ruiters 2012).

2. Current state of energy in southern Africa

Infrastructure deficits in energy are a major obstacle to industrial development. There is extensive evidence that weaknesses in power provision have constrained economic growth and development across sub-Saharan Africa (Eberhard and Shkaratan 2012). Unreliable electricity supply can negatively impact business sales, damage equipment, and cause businesses to incur additional costs (Eberhard and Shkaratan 2012, p. 12; Mbirimi 2010). Energy infrastructure is also an important component of broader development, with evidence linking the provision of electricity to improved development outcomes, including in health care².

The SADC region faces a growing electrical energy crisis, with supply unable to keep up with demand (USAID undated). Basic energy infrastructure is weak and capacity gaps exist at all levels. Much of the electricity produced comes from coal, which is both susceptible to price fluctuations on international markets, and a major contributor to environmental harm (USAID undated). Coal accounts for 88 per cent of South Africa's electricity production, helping it become one of the highest emitters of greenhouse gas emissions in the world (11th) (USAID undated).

3. Power trading between southern African countries

Southern African Power Pool (SAPP)

The SAPP is a regional association of SADC member states' national utilities energy providers (Maupin 2013). SADC coordinates activities among different national electricity companies and facilitates a shared electricity grid and market. The SAPP is comprised of Angola, Botswana, the Democratic Republic of Congo, Lesotho, Mozambique, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe. The primary aims of the SAPP are to (McDonald 2009):

- Facilitate the development of a competitive energy market in SADC;
- Provide the end user with a choice of electricity supplier;
- Ensure that the SADC region is 'a region of choice for investment by energy-intensive users' (McDonald 2009, p. 31);
- Support sustainable energy developments through appropriate economic, environmental and social practices;
- Provide a forum for the development of a 'world-class, robust, safe, efficient, reliable and stable interconnected electrical system' in the SADC region (McDonald 2009, p. 31).

Initially, international donors played a prominent role in developing the southern African electrical grid, however more recently, **power utilities**, rather than national governments or outside players, have become the main drivers (Söderbaum 2004). The South African company Eskom – one of the world's largest

² See: <http://www.rvesol.com/our-solutions/rural-healthcare/>

electricity companies – is a key player in the formation of the regional energy sector in southern Africa due to size, dominance and expertise (Söderbaum 2004).

The New Partnership for Africa's Development (NEPAD) considers the SAPP the **most advanced power pool in Africa** (Maupin 2013). As of 2011, it was reported that at least 28 bilateral contracts had been signed between SAPP member utilities, and that net imports within SAPP represented 7 per cent of total SAPP generation (ICA 2011).

Despite the hopes for the SAPP, **trade among countries within the region remains fairly limited** (Eberhard et al. 2011). Most trade within SAPP occurs between South Africa and Mozambique, with South Africa re-exporting much of the electricity it imports from Mozambique back to the country's aluminium smelter. South Africa is the key dominant provider in the region, with Botswana, Namibia and Swaziland all dependent on exports from South Africa (Eberhard et al. 2011).

Challenges to regional power sharing

Capacities, needs and the dominance of South Africa

One of the key challenges of the SAPP is in overcoming differences in the capacity and needs of different member states. Members have varied political, economic, social and environmental situations, and variable needs and requirements in terms of energy production and consumption (Maupin 2013). For instance, Eskom generates about 80 per cent of the electricity produced in southern Africa, meaning it dominates the regional market (Eberhard and Shkaratan 2012, p. 12). South Africa's role as the largest economy and main producer places it in a position of influence in shaping regional energy policy (Niyimbona 2005). Some experts caution that handling the imbalances in the region, as well as Eskom's dominant role, is a potentially 'risky' matter; 'it is no means automatic that Eskom's interests are the same as the broader interests of the region, and particularly not the peoples of the region' (Söderbaum 2004, p. 155).

Infrastructure deficits

Lack of infrastructure and lack of maintenance of existing infrastructure is an important limitation factor. The ICA (2011) notes that regional power trade has been constrained by both transmission congestion within transit countries (particularly Zimbabwe and Mozambique), and at interconnection level between countries (specifically, Zimbabwe, Zambia, Botswana and Namibia).

Governance and regulation

Experts note that government policies will play a key role in the future development of the SAPP region (Mbirimi 2010). In particular, policies on end user prices and subsidies to power utilities will impact on both supply and demand. Strong political will is needed to develop and coordinate the SAPP. In a policy report on regional energy security dynamics, Mbirimi (2010, p. 18) notes that 'member countries should be prepared to subordinate their short-term national interests in order to promote the long term interests of the power pool'.

Unequal financial burdens

Some countries face more burdensome spending requirements to develop their resources, particularly those with hydropower potential, than others (Mbirimi 2010). Comments one expert: ‘one of the challenges SAPP faces is whether it can find ways of sharing or reducing the financial burden’ (Mbirimi 2010, p. 15). In the case of Zimbabwe, for instance, anticipated high spending requirements may be linked to a degraded electricity network, brought about by political and economic instability (Mbirimi 2010).

Human resource capacity

Human resource capacity, including the impact of HIV/AIDS, is a regional problem and has had an impact on the operation of member utilities (Hammons 2011).

4. The role of private finance in regional energy generation

Various experts note that the gap between demand and supply for basic infrastructure has been rapidly growing across Africa (OECD 2013). In SADC, inadequate financing hampers effective regional power integration and has contributed to diminishing generation surplus capacity, including through limited investments in generation and transmission infrastructure (Hammons 2011). In 2014, the World Bank announced an International Development Association grant of USD 20 million to help generate international investment in large-scale sustainable energy projects in Southern Africa³. However, experts note that public investment and Overseas Development Assistance will not be sufficient to fill regional and national finance gaps, meaning that **enhancing private sector participation in infrastructure will be critical** (OECD 2013). It is estimated that USD 100 billion will be needed from private sector sources if SADC’s Regional Infrastructure Development Master Plan (RIDMP) is to be successfully rolled out over 2014-2027. However, there are various factors identified in the literature that place constraints on attracting private finance.

Challenges to attracting private investment***Historic poor financial performance***

A case study and literature review of SAPP notes that the historic poor performance of utilities has led to difficulties in attracting private sector investment. SAPP reports of the financial performance of its members show low or negative rates of return and poor revenue collection performance for most of the utilities (ECA 2009). The capital intensive and long-term nature of investments in the power and electricity sector means that a small amount of uncertainty on factors such as price heightens the risks associated with investments (Mbirimi 2010).

Difficulties in setting priorities

There is some concern that lack of agreement on key priorities and needs has constrained attempts to attract private investment. Energy ministers from SADC asked the SAPP to prepare a list of priority projects in the region. However, there has been a failure to reach an agreement on which projects to pursue (Eberhard et al. 2011). Individual ministers generally favoured projects in their own countries, and some

³ See: <http://www.worldbank.org/en/news/press-release/2014/11/11/2014193afr>

countries had a less significant presence on the list (Eberhard et al. 2011). In 2007, SAPP presented an amalgamated list of all possible projects in the region, however they ‘failed to demonstrate the necessity and validity of the projects, and as a result none of them received financing’ (Eberhard et al. 2011, p. 46). SAPP then hired consultants to prepare a least-cost pool plan and prioritise projects, however again there was a failure to achieve consensus on a priority list (Eberhard et al. 2011).

Enabling environment

USAID (2011) note that strategies, policies and resources for attracting private investment are lacking about both national and regional levels. They advocate an ‘enabling environment’ for the introduction of private sector independent power producers (IPPs) to play a major role in diversifying electrical supply, and adding clean and renewable energy projects (USAID undated).

Managing the transition from public to private investment

The shift from public to private provision of infrastructure services can involve risks and demands careful preparation and management (OECD 2013). A number of **regional dialogue and experience-sharing platforms** have emerged to help address this shift, such as the SADC Public Private Partnership Network. Drawing from experience across the region, the OECD (2013) identify three areas of reform by which African governments can better attract private investment in infrastructure:

- Strengthening safeguards for investor protection and tackling restrictions on private participation in infrastructure sub-sectors (including limits on foreign ownership);
- Establish clear legal rules for public procurement options (including PPPs) and enhance the capacity and co-ordination of all agencies engaged in public procurement;
- Create a ‘level playing field between public and private providers of infrastructure services’ to create room for the private sector and allow it to participate on an equal footing with public providers (OECD 2013, p. 6).

Alternatives to privatisation

There is a small but growing body of literature that offers both criticisms of neoliberal energy policy, and explores alternatives to privatisation in southern Africa (McDonald and Ruiters 2012). Evidence of alternatives to privatisation in the electricity sector in Africa is weak, and includes a few cases of community electrification systems (Hathaway 2012). Some of the key lessons identified for developing an inclusive electricity system include (Hathaway 2012, pp. 372-384):

- **Engaging civil society:** Civil society engagement can help ensure government accountability, pro-poor planning, and the development of community-level electricity services;
- **Effective policies:** The critical body of literature on power sector reforms emphasises the need for autonomy and authority in regulatory boards; the provision of targeted subsidies for poor households; least-cost electrification options; and utility performance evaluations and renewal of licences based on technical performance and connection targets.

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6. Additional information

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