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**SOCS AND COMPETITION: REFLECTIONS ON SOUTH AFRICA'S EXPERIENCES IN  
TELECOMMUNICATIONS AND ENERGY**

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**Abstract**

State owned corporations have been serial offenders of competition law. Of the 21 abuse of dominance complaints referred to the Tribunal between October 1999 and September 2016, 13 involved former or current SOCs. SOCs often hold monopoly positions and control essential infrastructure and the record has been that of abuse of monopoly positions and even leveraging market power into adjacent markets. In addition, SOCs have often been protected by policy and regulation with the result of raising barriers to entry and dampening rivalry. How do we facilitate greater competition in these markets? The paper unpacks the ways that SOCs' anti-competitive conduct and policies to protect them from competition impacted on key markets in terms of barriers to entry and outcomes for consumers. It further considers the alternative ways of managing and regulating SOCs which can provide for more competitive outcomes and the gains from exposing SOCs to greater competition. The paper then proposes a competition policy targeted at SOCs with the objective of ensuring that the key social objectives are met while still preventing SOCs from distorting competition in key markets.

**JEL Classifications**

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## 1 Introduction

South Africa has twenty state-owned corporations (SOCs), also called Schedule 2 entities or major public entities. Many of these were established in the first half of the 20<sup>th</sup> century in support of the development of the infrastructure required to build a resource-based economy given the huge capital requirements for these infrastructure investments (Mokwena, 2012). Up until 1994, energy, water, telecommunications and most transport services were run by public utilities and state-owned enterprises. Post-1994 and in line with international best practice independent regulators were established and most of these entities were corporatized. A small number of SOCs were privatised, such as Sasol, and others partially privatised (Telkom and ACSA). The intention was to reduce the role of government in these industries, through restructuring, competition and privatization and to have regulatory oversight to ensure the efficient development of these industries and the downstream sectors which depend on them.

Recently, the role of SOCs in the economy has once again been the subject of debate in South Africa due to the high profile financial difficulties experienced by several SOCs. While the financial sustainability of SOCs is important, it is useful to also review their impact on socio-economic outcomes, which includes their role in achieving broader policy goals and how they influence the markets in which they operate. In particular, it is relevant to consider how SOCs and policies around SOCs have impacted on competition. SOCs can have a profound impact on competition in the economy in terms of both structure and outcomes, where they compete to offer services with private firms and where they enjoy a statutory or de facto monopoly.

SOCs are often created in response to market failure or to carry out a public interest mandate. For example, SOCs can play an important role in developing services, taking long term investment decisions and providing essential facilities. However, theory and practical experience has shown that even where they are successful in achieving these goals, SOCs can simultaneously have a significant distortionary impact on competition. SOCs often receive advantages due to their state ownership, in some cases in return for undertaking unfunded public service activities, which can make it difficult for rivals to compete. In a number of cases, SOCs have been shown to use their advantaged positions to compete unfairly, attempting to marginalise competitors and drive them out of the market. If left unchecked, such effects can undermine any public interest benefits derived from the existence of SOCs. For this reason, countries have grappled with the question of how best to regulate SOCs from a competition perspective, in order to realise the potential benefits without causing competitive distortions which harm rivals and consumers. Approaches vary across countries, but competition law and advocacy by competition authorities are central in such efforts.

One way in which SOCs have impacted on the competitive landscape in various markets in South Africa is through anti-competitive conduct. Twenty-one abuse of dominance cases were referred to the Competition Tribunal between October 1999 and September 2016, of which the majority (thirteen) involved former or current state-owned companies including Telkom, SAA, Safcol and Foskor (Roberts, 2017). Such conduct imposes significant costs on rivals, consumers and the economy. State-owned airline, SAA, has twice been found to have contravened the Act by abusing its dominance in order to exclude rivals.<sup>3</sup> The Tribunal has found that its conduct caused harm to competition and consumers likely paid higher prices and made poorer choices as a result. Likewise, Telkom has been found to have abused its

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<sup>3</sup> See Competition Tribunal case numbers 80/CR/Sept06 and 18/CR/Mar01, Competition Appeal Court case number 92CACMar10 and High Court case numbers 12026/2012 and 2011/34079.

dominance twice<sup>4</sup> with a significant impact on consumers and the economy. One of the remedies imposed in the settlement with Telkom in relation to the second case of abuse of dominance was to require it to reduce wholesale prices which had been set too high as part of a margin squeeze against rivals who relied on access to Telkom's infrastructure. It was estimated that this reduction would result in savings of R875 million to the market over three years. This gives some indication of the extent to which Telkom's conduct may have increased the cost to communicate during the contravention period.

Added to the cost of the conduct and reduced competition, SOCs found guilty of such conduct face further costs in terms of penalties and damages claims which, by virtue of their state-ownership, are ultimately costs to the state either in the form of reduced dividends or higher requirements for financing or guarantees. SAA was fined a total of R45 million and ordered to pay R1.16 billion and R325 million respectively in damages to competitors Comair and Nationwide.<sup>5</sup> Telkom was fined a total of R649 million by the competition authorities. Then there are the costs of litigation. Telkom, for example, raised a jurisdictional dispute with the Competition Tribunal which led to years of litigation (and legal fees) before it was ultimately found to have contravened the Act. SAA appealed the second finding against it to the Competition Appeal Court which dismissed its appeal with costs. It also faced the costs of fighting damages litigation against Comair and Nationwide. These examples illustrate that anti-competitive conduct by SOCs impose heavy costs on consumers, the economy and the fiscus.

In addition to the competitive distortions caused by SOC conduct, protective policies and regulation towards SOCs can also undermine competition to the detriment of economic efficiency and consumers. The performance of the SOCs as well as the role of regulators in providing oversight have been reviewed over the years.<sup>6</sup> Two important points highlighted by these reviews is the poor record in terms of allowing access to key infrastructure by SOCs and the lack of transparency in the ways that SOCs undertake infrastructure investments (Mondliwa and Roberts, 2013). This matters because as significant (and sometimes monopoly) providers of infrastructure in key sectors, SOCs have the ability to lower barriers to entry for new players and thus stimulate greater rivalry which leads to increased innovation and choice and lower prices. Barriers to entry have been shown to be pervasive in the South African economy and a major barrier to transformation and inclusive growth (Roberts, 2016). Often South Africa's SOCs have contributed to raising rather than lowering barriers to entry.

Reviews of economic regulation of South African SOCs in infrastructure have found that regulation has often been ineffective in promoting competition (Hawthorne et al, 2014). One study found that regulators are unable to protect consumers against poorly executed SOC projects and cost overrun; regulators are not effective in preventing monopoly abuse; and, regulators are unable to review new market entry and capital projects effectively (Steyn, 2011). Though ex-post competition enforcement has been somewhat effective in terms of allowing access to at least some of Telkom's infrastructure, due to the litigious nature of competition enforcement in South Africa, the cases have lasted in excess of 10 years meaning that the desired outcomes have been substantially delayed.

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4 See Competition Tribunal case numbers 11/CR/Feb04 and 016865.

5 Note that both numbers include interest from the time of the contravention to date of payment.

6 See Mondliwa and Roberts (2013) and FRIDGE (2011) for a review of these studies.

In this paper, we explore the experience of South Africa in the telecommunications and energy sectors in order to illustrate the competitive distortions which can be caused by SOCs. The two sectors were selected on the basis of their importance as enablers of economic development. For example, when competition in telecoms is effective, it has been found that it can result in expanded service, lower prices, and greater innovation (Jameson et al, 2009 and Hawthorne et al, 2016).

In telecommunications, government policy has explicitly and implicitly advantaged Telkom, at the expense of rivals. Telkom itself has been fined twice for abusing its dominant position and undermining the ability of rivals to compete. As a result, the sector has been uncompetitive, and services expensive and of poor quality. In energy, policy decisions have preserved monopoly provision of infrastructure rather than encouraging competition. Moves to liberalise the electricity generation sector and introduce competition have failed to gain traction. Gains from the introduction of competition in the form of renewable electricity providers have ground to a halt as the state-owned incumbent (and legislated single buyer of electricity) refuses to contract further generation capacity. Policy and regulatory decisions have undermined private investment and potential competition in the petroleum pipelines sector.

In a number of areas, SOCs have been allowed to maintain a monopoly which is broader than the potential natural monopoly activities, and to cross subsidise the cost of complying with universal services obligations using returns from the monopoly aspects of their businesses. This has generally led to inefficiency and distortions as well as poor outcomes for consumers, while universal service goals remain unmet. In some cases, SOCs are simply not delivering effectively on the mandate for which they were created.

The South African experience reviewed in this paper illustrates that where the presence of SOCs results in competition being stifled, costs are imposed on the economy and on consumers, whereas policies which support and promote competition lead to better outcomes and also drive SOCs to be more efficient and effective. However, in both sectors reviewed, government policy shows signs of further entrenching the dominance of state-owned players, rather than opening up the sectors to rivalry and dynamism.

We therefore motivate in this paper for a competition policy aimed specifically at SOCs. This would aim to ensure that SOCs meet their social objectives while causing minimal distortion to competition and, as far as possible, promoting rivalry and lowering barriers to entry. By forcing policymakers and regulators to explicitly acknowledge the impact which SOCs have on competition, this would make it less likely that similar mistakes will be made in future. The paper proceeds as follows. Section 2 presents a review of literature and international experience in terms of the impact of SOCs on competition and different approaches to minimising competitive distortions caused by SOCs. Section 3 looks at the experience in telecommunications and energy in particular, focussing on the impact of South African SOCs on competition. Section 4 concludes and sets out our proposal for a competition policy for SOCs.

## **2 SOCs and competition: theory and international best practice**

State-owned corporations have been a feature of most economies at different points in time. They have often been created where very large investments in infrastructure are required, since governments can typically mobilise large amounts of capital more cheaply than the private sector. State ownership can also allow companies to take a longer-term view and to

consider the social returns from investment rather than only the returns to the company itself. In general, where social returns are higher than private returns, the market will under-provide the good or service and there is therefore a rationale for interventions by government to ensure that the socially optimal solution is achieved. In addition, SOCs often operate in markets where there are substantial scale economies and network effects, and where parts of the required investment have the characteristics of a natural monopoly. Where these features make it likely that there will only be one player in a particular market, it has sometimes been considered appropriate for the relevant assets to be state-owned. Through providing access to key infrastructure on reasonable terms, SOCs can stimulate entry and competition and encourage dynamism and innovation. SOCs can also be used to address broader policy goals since their mandate can be broadened beyond simply maximising profits. For example, SOCs may be encouraged to expand services in order to reduce spatial inequality in terms of access to products and services. Often these different needs occur simultaneously, creating a strong rationale for state intervention in the form of an SOC.

Over the years, approaches to SOCs have changed, and in many countries, even where SOCs have not been subject to full or partial privatisation, corporatisation and regulation have changed the nature of their roles and behaviour. Increasingly, countries have moved to introduce competition into markets which were previously dominated by SOCs, and, where direct competition is not possible (e.g. in electricity transmission), have regulated access to the SOC's facilities in order to lower barriers to entry and promote competition downstream. While differing approaches to the extent and role of SOCs still exist, two important points can be made in terms of their rationale and impact. Firstly, where SOCs perform poorly they can exert a high cost on the economy due to their size and importance in key sectors of the economy, but they also undermine the rationale for their existence if they fail to deliver on their social objectives. Efficient, well-performing SOCs are required if broader policy goals are to be met effectively. Secondly, SOCs and the way in which they are regulated and protected by government can have a profound impact on competition.

Although SOCs can stimulate entry and competition as discussed above, they also have the potential to distort competition in two main ways: passively through receiving competitive advantages by virtue of their state ownership; or actively by abusing their privileged position to exclude rivals. We briefly discuss each of these below.

## **2.1 SOCs and competitive neutrality**

In a report for the OECD, Capobianco and Christiansen (2011) list the basic competitive advantages that SOCs often enjoy. These are:

- Outright subsidisation – this can range from financial assistance to benefits in kind or tax exemptions.
- Concessionary financing and guarantees – this refers to anything which reduces the cost of borrowing for the SOC to below market levels and includes implicit or explicit guarantees provided by government which reduce the perceived risk to lenders.
- Other preferential treatment by government – this can describe any other way in which government uses its powers to advantage SOCs such as exemptions from costly regulatory regimes, advantageous public procurement policies or access to government information.
- Monopolies and incumbency advantages – government may grant SOCs exclusive rights over certain activities.

- Captive equity – this refers to the fact that control of an SOC cannot be transferred in the same way as it can be in a private company – unless there is a change in policy stance, the government will continue to own and control the entity. This is an advantage for SOCs as there are more limited (if any) requirements for dividends or returns which may give them less incentive to operate efficiently and more incentive to engage in exclusionary behaviour. This will be dealt with in more detail below.
- Exemption from bankruptcy rules – this removes another disciplining factor for SOCs.

These advantages and their potential to distort competition in markets where SOCs participate have prompted some countries to implement a “competitive neutrality” regime. The concept of competitive neutrality means that SOCs should receive no advantage (or disadvantage) by virtue of being state-owned, and should face circumstances as close as possible to those faced by private firms. The benefits of this are argued to include greater efficiencies, higher quality products and lower prices, as well as better use of taxpayers’ resources (EU, 2015).

The concept of competitive neutrality is important in the EU, where it is necessary to prevent distortions in competition between companies in different member states due to government intervention. As such, EU law makes clear that competition law applies to government owned entities; that entities must be treated neutrally, regardless of ownership; that member states must not implement any policy which deprives EU competition law of its effectiveness; and that SOCs cannot benefit from “state aid” or subsidy, unless such aid has been explicitly approved by the EU (EU, 2015). State aid is only approved where “necessary and proportionate to achieve a particular objective of common interest” such as for environmental protection.

Competitive neutrality has also been adopted in Australia, where there were five main “planks” of competitive neutrality reforms (Rennie and Lindsay, 2011). Transparency and accountability requirements were to bring SOCs in line with commercial private sector enterprises through defining clear and transparent objectives, establishing boards with a commercial focus, introducing performance benchmarks and targets, monitoring performance and setting appropriate financial targets. Taxation neutrality involved removing taxation exemptions for SOCs where possible or establishing “taxation equivalent regimes”. Debt neutrality would ensure SOCs obtain financing at market rates and do not obtain preferential financing. Rate of return neutrality required SOCs to earn commercial returns on the provision of goods and services sufficient to ensure long-term commercial viability and pay dividends to the relevant government entity. Finally, regulatory neutrality aimed to modify regulatory regimes to ensure no discrimination occurred.

While reforms targeted at ensuring clear objectives, transparency, accountability and strong performance are clearly important in order to ensure that SOCs fulfil their purpose effectively, requirements such as debt and rate of return neutrality may undermine the rationale for the existence of SOCs, where this is around significant investment requirements and providing services in areas which would not be served by the market otherwise. Thus, strict competitive neutrality may not be practical or desirable in all contexts.

The UK’s Office of Fair Trading (OFT) (now the Competition and Markets Authority) refers to markets in which SOCs compete with private firms as “mixed markets” and suggests that competitive neutrality is a minimum condition for effective mixed markets, seeing this as “ensuring that there are no artificial barriers to entry and that outcomes are efficient, given wider policy objectives” (OFT, 2010). It notes that this is important since it affects the efficiency

of the market and firms' incentives to innovate. This definition of competitive neutrality appears to be more measured and practical, allowing for broader policy imperatives to enter the discussion.

Similarly, Healey (2014) argues:

"[Competitive neutrality] does not need to be an absolute. It may not be appropriate in circumstances where it hampers the achievement of important societal goals but where claims of public interest are made they should be subject to objective consideration and determination along pre-determined lines. In some circumstances the benefits of a CN initiative would not outweigh the negative impact of its implementation and this needs thorough consideration. CN may be in direct contrast to other policies which prevail in some jurisdictions, such as industrial or socialist policies." (Healey, 2014:14)

What this suggests is that the key is to ensure that any competition implications of policy towards SOCs are explicit and weighed in relation to the likely benefits of such policies. This may be achieved through some form of competitive neutrality policy (weak or strong) or through other measures such as corporatisation, privatisation, effective governance, improving independence, accountability and disclosure and competition advocacy (Healey, 2014). Where there is a strong rationale for an SOC to exist, what is required are mechanisms to ensure that it is focussed, efficient and helps to promote competition, or at least does not undermine it. As we discuss further below, a clear competition policy for SOCs may be one way of achieving this.

Other developing countries have grappled with similar issues. In China, SOCs are seen as the leading force of the national economy and protected by the constitution, which creates conflict with the Anti-Monopoly Law (AML) (Shiying, 2014). Legislation pertaining to a specific industry generally prevails over the AML, which can create conflicts and confusion in terms of the jurisdiction of supervisory bodies. SOCs have received competitive advantages in the past, not least being awarded monopoly or near-monopoly positions in various markets. Some argue that there have been benefits to this approach, where there are important public interest goals to be met. For example, China's National System of Innovation based on the promotion of cooperation between universities, research centres and enterprises (usually SOCs) has been effective in boosting R&D and innovation in key sectors (Gabriele, 2014). This may be important in a developing country "*engaged in a research-intensive catching up process aimed at accelerating technological progress, and at enhancing indigenous innovation capacity*" (Gabriele, 2014). In addition, in certain areas, strong competition has been permitted, albeit confined to rivalry between different state-owned companies (Gabriele, 2004). Indeed, this was the vision of reform in the 1990s, where the state would control whole industries but through ownership of multiple competing enterprises.<sup>7</sup>

However, this policy has not always been successful, and current policy reforms are still focussed on dealing with inefficient SOCs which are often significantly less productive than their private counterparts (IMF, 2016). Although SOEs account for over 50% of bank credit and 40% of total industrial corporate assets, their share in value added has fallen to 16% and they only account for 10-15% of urban employment (IMF, 2016). It appears that the goal of promoting competition between SOCs in order to promote efficiency has not been effective in

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<sup>7</sup> The Economist, 22 July 2017. 'Reform of China's ailing state-owned firms is emboldening them'. Available here.

practice. Shiyang (2014) describes how, in the oil industry, three state-owned companies which were granted monopolies in wholesaling in different parts of the country in order to ensure security of supply, aided by preferential treatment, were able to leverage their monopoly power to control other parts of the value-chain including importation, retail and transportation. For example, in supply and distribution, a notice issued by the Minister of Railways requires railway bureaus to obtain the approval of CNPC and SINOPEC (the SOCs) before accepting petroleum for transportation. This effectively forces any private refineries to use road transportation at a much higher cost. The companies' market power allows them to control prices in the petroleum industry which has harmed private wholesaling and retailing players (Shiyang, 2014).

As noted above, further SOC reform is underway in China, including trying to reduce the competitive advantages and disadvantages which SOCs face and subject SOCs to greater competition scrutiny (Shiyang, 2014). However, recent developments have not reflected this approach, with consolidation of SOCs appearing to be the preferred means of stimulating better performance from SOCS. While this may improve profitability in the short term, this may not promote greater competition and better outcomes in terms of prices and choice.

The example of China highlights that there can be conflict between public interest objectives and strict implementation of competitive neutrality, particularly in developing countries but also that protecting SOCs from competition in the name of public interest objectives is likely to be counter-productive. Even where this recognised by policy makers, it can be difficult to ensure neutral treatment in practice, given that the incentives of officials making policy and regulatory decisions which impact on SOCs and those of managers of SOCs may not be aligned with the goal of promoting competition. Political economy considerations are therefore also important to understand and address.

Similar to China, SOCs are an important feature of the market in India and, following reforms, most are now competing with the private sector (Gaur, 2014). The Competition Commission of India has been active in promoting competitive neutrality through both enforcement and advocacy. This approach seems to have been effective in removing barriers to competition, reducing government financial support and listing SOCs on capital markets. However, SOCs still receive advantages and are relatively inefficient, thus there remains a need for further reform in terms of ownership structure and governance in particular (Gaur, 2014). The Indian experience illustrates that the competition authorities can play a role in advancing competition principles in dealing with SOCs, but also that competition law can only go so far in advocating for the implementation of reforms. The will to implement such reforms at a policy level must also exist.

Overall, the literature suggests that transparency around the objectives and public interest mandates of SOCs is extremely important as well as around any decisions which protect or advantage SOCs for the purpose of allowing them to fulfil these mandates. This ensures that any trade-offs between competitive impact and public interest objectives are explicit, and weighed up in advance. In the real world, such trade-offs are inevitably difficult to weigh, and this makes space for lobbying by incumbents in the face of complex policy and regulatory decisions. Experience can provide us with useful lessons in terms of which approaches are likely to be more effective in delivering on the full range of objectives, as illustrated in section 4.



It is also important to note that it is not always the case that the achievement of broad policy objectives and the fostering of competition must be at odds. As far as possible, the provision of core infrastructure should facilitate rivalry and new entry, not least because smaller firms tend to be more nimble, responsive and creative in terms of responding to consumer demand and changing technologies and applications. Policy and regulation around SOCs should not preclude rivalry and should in fact encourage it as far as possible. The success of SOC policy should thus partly be measured in terms of the competition that it facilitates.

## 2.2 Anti-competitive conduct by SOCs

A second, but related, concern with regard to the impact of SOCs on competition is that SOCs often have a very strong market position (market power) or even monopoly control over an essential input by virtue of past (or present) policies and/or natural monopoly. Firms which have high market shares are not a competition concern per se, but only insofar as they use (or abuse) their market power to extract monopoly prices or exclude competitors. While SOCs are often set up with the aim of achieving public interest goals, and even to prevent the abuse of market power in situations of natural monopoly, in practice they have frequently been found to abuse their positions to the detriment of competition. South Africa is not immune to this, as will be discussed further below.

This raises a question as to how a state-owned company, established in order to operate in the public interest, can end up acting in a manner that is anti-competitive, marginalising competitors and worsening outcomes for consumers. There are two main possibilities. Firstly, that government as the majority or only shareholder is supportive of such conduct as means to increase profitability and shareholder returns. While this may seem counter-productive to the rationale for creating SOCs, short-term resource constraints may at times appear more pressing to policymakers than the long-term competitive health of the economy. Secondly, it could be that the boards and management of SOCs do not face the correct incentives to encourage them to maximise the social welfare function rather than focus on the competing objectives of profitability or revenues.

Sappington and Sidak (2003) provide support for this second theory, arguing that the managers of state-owned firms often face different objectives from private firms and that this provides them with more and not less incentive to act in an anti-competitive manner. SOCs are more likely to get bailed out and their managers are less likely to be fired than privately owned firms. They are also in many cases not required to generate high returns and are expected to fulfil a social mandate (such as ensuring wide access) which detracts from their ability to earn market returns. In such circumstances, managers may be motivated to expand the scale and scope of the operation instead of its efficiency, and to maximise revenues rather than profits (OECD, 2009). Where SOCs are maximising a combination of profit and revenue, they have a greater incentive to abuse their dominance, by using strategies such as charging prices that are below cost or using control of an essential input to raise rivals' costs (Sappington and Sidak, 2003). Excluding a rival from the market leads to the SOC gaining a greater share of that market, while lowering profits through such activities is of less concern. Where an SOC has a monopoly position in one market and also competes in related markets, its ability and incentive to exclude rivals is particularly strong (Sappington and Sidak, 2003). This example illustrates that what matters in practice is how boards and managers are incentivised and rewarded, which may not always (or even often) be in favour of maximising social welfare, even where the stated objectives of the SOC are public interest related.

Numerous instances of anti-competitive conduct by SOCs have been investigated and sanctioned. Deutsche Post was fined by the European Commission in 2001 for various types of anti-competitive conduct including cross-subsidising below cost prices in the competitive business parcel services market with revenues from its letter delivery monopoly.<sup>8</sup> The Japanese postal service was accused of similar conduct (Capobianco and Christiansen, 2011), as were the Spanish and Lithuanian postal services (Fox and Healey, 2013). The state-owned petroleum monopoly in Mexico, Pemex, was found to have violated antitrust laws by requiring its gas stations to carry only Pemex lubricants, and not those of competitors, making it difficult for competitors to distribute their products (Fox and Healey, 2013). In Australia, a statutory power authority and electricity provider was found to have abused its dominance by refusing to grant access to its power lines to a potential competitor (Fox and Healey, 2013). As noted above, in South Africa the majority of cases of abuse of dominance referred to the Competition Tribunal have concerned state-owned or formerly state-owned companies.

### 2.3 Universal service obligations

Internationally, a range of different approaches to reaching universal service targets have been used, the most successful of which rely on competition between providers, rather than a so-called “national champion” to ensure rollout targets are achieved with value-for-money. A range of these are discussed in a review of options for increasing access to telecommunications services in low income and rural areas by the World Bank (2010), summarised in Table 1.

Reverse auctions select firms to roll-out services to areas which would otherwise be underserved according to which firm(s) requests the lowest subsidy for doing so (and meets any other specified requirements). This allows the authority to generate competition for the provision of services and achieve the best possible value for money. Output-based aid is a disbursement mechanism where these subsidies are attached to the delivery of specified outputs rather than the infrastructure itself; so-called “smart subsidies” (World Bank, 2010).

Bottom-up projects are those which involve community participation and are designed and submitted at a local level. This can include financing for small local operations (World Bank, 2010). Project applications are assessed against a set of qualification criteria.

Institutional demand stimulation refers to the “sponsoring” of entry by government, by guaranteeing a revenue stream to operators. This is also referred to as government playing the role of an “anchor tenant” (World Bank, 2010). For example, government can contract operators to provide services to government entities in a particular area, in order to ensure that they can cover the cost of investment to extend their network. Where there are a range of government entities in a particular area which require services (such as schools, clinics, municipal buildings etc.) government can aggregate this demand and invite operators to bid on a competitive basis to roll out a network. This has been used with some success in the Western Cape, where the Provincial Government issued a tender for a broadband service provider for schools across the province, which provided sufficient incentive for a number of firms to bid to roll out networks in these areas. This example will be discussed further below.

License obligations are the main type of universal access intervention which have been used in South Africa to-date. They involve attaching access or roll out obligations to the awarding

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<sup>8</sup> Case COMP/35.141 (OJ L 125, 5.5.2001)

of operating licenses. License obligations will only be successful where they are realistic, well-designed and enforced. In South Africa, we have seen that they have often been left unmet and unenforced. They can also dampen competition if applied indiscriminately, since small and particularly local entrants may be put off by stringent requirements such as a requirement to roll out a national network. For these reasons, the use of license obligations as a means of achieving universal access has become less popular (World Bank, 2010).

End user subsidies refer to the approach of providing consumers with subsidies for voice and data services with the aim of stimulating supply by increasing purchasing power. This is an attractive approach from a competition perspective, as it allows competition to determine which operators are ultimately successful and gives consumers choice over the type of product they want to buy and who to purchase it from. However, it can be administratively challenging from an implementation perspective. The World Bank (2010) notes that this approach has been more common in developed countries for this reason.

A designated universal service operator refers to placing universal access requirements on just the incumbent operator, due to its greater ability (in theory) to meet access objectives at a low cost. The designated operator is then compensated only for those cost items that are incurred exclusively due to the specific obligation. This works well for existing networks but not necessarily for expanding coverage and can be complicated to implement due to the complex nature of cost and compensation calculations (World Bank, 2010). Access Deficit Charges (ADC) are set to compensate the incumbent for providing any services below cost. These have become less popular for the reasons given above as well as a trend towards privatisation and liberalisation (World Bank, 2010). The history of Telkom's USOs described below highlights the danger of relying only on an incumbent to promote access, even if it is state-owned, and of giving attention only to the extent of roll out, without considering the affordability of the services.

**Table 1: Instruments for universal access**

Instrument	Issue addressed	Means of addressing issue
Reverse auctions (award) and Output based aid (disbursement)	Though sustainable in the medium term, some projects are not initially attractive to investors	Reverse auctions: Award projects to operator that will deliver required services for the lowest subsidy;  Output-based Aid: Disbursement schedule tied to delivery of outputs rather than infrastructure
Introduce bottom-up projects for universal access	National operators usually don't design projects/products addressed for low income rural areas	Allow for community based initiatives to be financed
Institutional demand stimulation	Low demand in rural areas reduces attractiveness of supply	Create "captive" demand for service in rural and low-income areas by committing government agencies to pay.

Instrument	Issue addressed	Means of addressing issue
License obligations	Lack of interest of entrants established in main cities to rollout nationwide	Include mandatory areas for coverage as part of licenses
End-user subsidies	Low-income and rural households are unable to afford telecommunications services	Target population is given a subsidy that allows them to pay for services
Designated Universal Service Operator	Reaching high cost areas is a disadvantage for incumbents when they face aggressive competition in densely populated/low cost areas	An operator, usually the incumbent in countries with preexisting national coverage of fixed networks is given the task of fulfilling the universal service strategy of the country in return for a per-connection transfer from the government
Access Deficit Charges (ADC)		Incumbent operators are allowed to receive compensation for every connection deemed as high cost

*Source: World Bank (2010)*

## 2.4 Conclusions on international approaches and relevance to South Africa

SOCs can be a significant distortion to competition, both through advantages they receive by virtue of their position and due to their incentives to stifle competition and exclude rivals. This can threaten the achievement of social objectives which provided the rationale for creating the SOC in the first place. Even where the SOC is effective in meeting its social objectives, these gains may be outweighed by the negative consequences of dampening competition. This has been recognised internationally and countries have taken a variety of approaches to dealing with the issue, from introducing competition law to SOC to SOC reform to the application of strict competitive neutrality frameworks.

The international examples illustrate that pro-competitive reform of SOC and the introduction of competition to markets where SOC have held monopoly positions is important, making SOC more efficient and driving gains for consumers. However, if policy and regulatory decisions still favour SOC and disadvantage rivals (see the example of Telkom below for example), then gains will be limited. It is also important to note that even where stated policy towards SOC is competition neutral or even pro-competitive, the incentives of policymakers and regulators with direct influence over SOC and the markets in which they operate, as well as those of the board and management of SOC, must be aligned with this in order for it to be achieved. Certain areas of pro-competitive reform (such as local loop unbundling in the telecommunications market) require strong regulatory commitment and enforcement in order to effectively open up markets to competition, and without the will to subject SOC to competition, these reforms can fall by the wayside.

Competition law therefore is critical in terms of ensuring that abuses of dominance are punished and similar conduct deterred in future. However, this clearly does not represent the whole solution. In terms of policy and regulatory changes, there is also an important role for the competition authorities in advocating for the incorporation of competition principles in decision-making around SOCs. Advocacy can play a key role in making the case for the gains from competition and the costs to the economy of supporting monopolies and dampening rivalry.

A competitive neutrality framework encourages transparency and makes the advantages received by SOCs clear. This forces policy makers to acknowledge decisions which are being made in favour of SOCs and to explicitly weigh any trade-offs between public interest goals and competition. However, applying rigid competitive neutrality rules can end up being self-defeating as, if SOCs must be treated and behave exactly the same as private firms, it begs the question of why they exist in the first place. The examples discussed above highlight that a range of broader policy goals can be important, and SOCs can be critical in, for example, providing long-term investment in key sectors as well as promoting access to services. Therefore, it may be unrealistic or undesirable to apply strict competitive neutrality to SOCs.

A more practical solution would be to implement a competition policy specifically aimed at SOCs. This would set out clear objectives and performance criteria for SOCs, including around their impact on competition and on rivals. Promoting competition should be made an explicit objective of SOCs, for example through granting access to infrastructure on fair terms. Such a policy should also include improved economic regulation in key sectors, greater independence of regulators and greater cooperation between competition authorities, economic regulators and policymakers in charge of SOCs. The competition policy should require explicit discussion of the purpose and rationale for SOCs and the impact of their conduct and of policy and regulatory interventions in relation to SOCs on competition. In section 4, we set out further detail on what could be included in such a policy.

International experience shows that competition and public interest goals do not need to be at odds with one another. In fact, using competition principles can be the best way of achieving public interest goals in a cost-effective way as shown by the universal service examples above. This requires a mindset shift from policymakers to move away from the traditional model of providing SOCs with state-backed monopolies in return for public service obligations and towards a more competitive approach. Again, a competition policy for SOCs and greater cooperation between the competition authorities and policymakers and regulators dealing with SOCs may assist with this. In cases where there is a genuine trade-off between competition and public interest, competition authorities can be of assistance in informing these decisions by demonstrating the negative implications of stifling rivalry in key sectors of the economy.

### **3 Alternative approaches to achieving desired outcomes: experience from SA and international examples**

In this section, we explore the different ways in which SOCs can distort competition through discussing South African experience in two sectors where SOCs and policy decisions concerning them have had a major impact on the development of competition: telecommunications and energy.

### 3.1 Telecommunications

#### Licensing and policy decisions

South Africa's incumbent fixed line provider, Telkom, was incorporated in 1991 as a state-owned enterprise. Currently, Telkom is 39.3% state-owned, with a further stake of just over 11% held by the Public Investment Corporation (PIC), a fund manager wholly owned by government and the manager of the Government Employees Pension Fund (GEPF).<sup>9</sup> Telkom thus remains majority state-owned, and government's ownership interest in the company has been an important factor in shaping its development and competition in the telecommunications sector over the past 20 years. Telkom still provides the vast majority of fixed line infrastructure in the country as well as participating in downstream markets. It also competes in the mobile market via Telkom Mobile, the smallest of South African's four mobile networks.

Telkom was partially privatised in 1997, when a 30% stake was sold to a consortium of international telecommunications companies (Malaysia Telecommunication and SBC Communications)<sup>10</sup> and then listed on the JSE in March 2003<sup>11</sup>. The intention of bringing in a 'strategic equity partner' was to bring new investment and technologies into Telkom. At the same time, a process of managed liberalisation was implemented, which was intended to gradually introduce competition as well as an independent regulator which would regulate Telkom's prices in the short term, as well as ensuring a level playing field for the eventual entrants to the sector (Makhaya and Roberts, 2013). From 1997 to 2002, Telkom's monopoly position was protected, in order to allow it to prepare for the introduction of competition and to allow it to fulfil universal service objectives.

It has been well documented that this approach was not successful from either a universal service or a competition perspective.<sup>12</sup> While the total number of fixed lines increased from 3.9 million in 1996 to 4.9 million in 2002 (

Figure 1 1), penetration in terms of the proportion of the population fell from 30% to 25.7% (Hodge et al, 2008). Most of the new connections installed between 1998 and 2002 were disconnected, at least in part due to the inability of customers to pay for the service (Lewis, 2013). A policy review conducted in 2008 found that government policy had been unsuccessful in achieving access goals throughout the period from 1994 to 2008, and that the policy of using Telkom as an "access champion" with extensive roll-out obligations in return for exclusivity had been a failure (Hodge et al, 2008).

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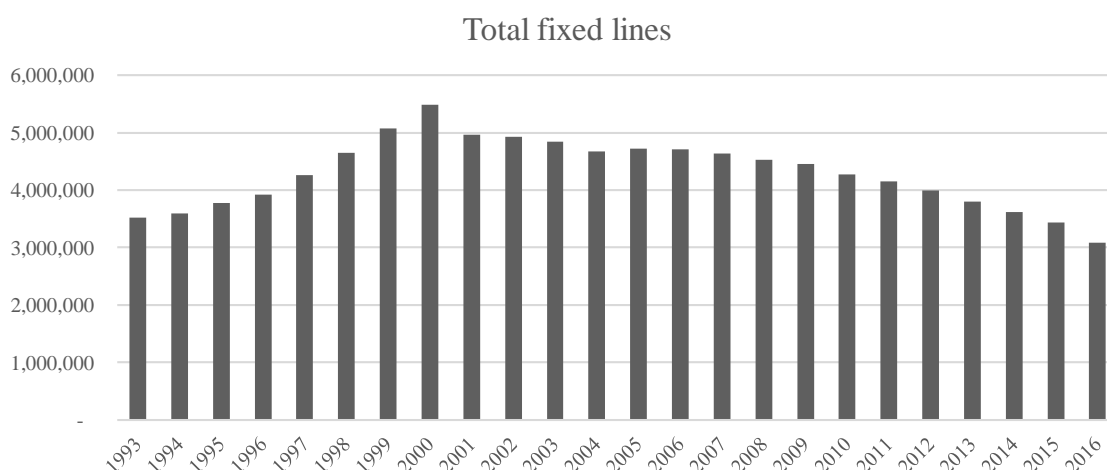
9 See Telkom website.

10 See DTPS website.

11 See Telkom website.

12 See for example Makhaya and Roberts (2003), Hodge et al (2008), Lewis (2013), Makhaya and Roberts (2013)

**Figure 1: Number of fixed lines, 1993 – 2016**



Source: Telkom Annual Reports

Note: In 2001 Telkom closed a large number of non-paying lines, resulting in a fall in the number of total fixed lines. This suggests that numbers pre-2001 do not accurately represent the extent of access.

Telkom was subject to price regulation from 1996 onwards using a price cap or “CPI-X” formula. Under this regime, it was allowed to sharply increase the price of local calls, with the rationale of moving towards cost-based tariffs in preparation for competition (Makhaya and Roberts, 2003). This led to prices which were high in terms of international benchmarks, which reduced the affordability of services (Makhaya and Roberts, 2003). The regulator subsequently tried to tighten the price cap to reduce prices, but the Minister of Communications refused to sign the new regulations into law, effectively maintaining the high prices. This may account for some of the decline in fixed line connections during this period (Makhaya and Roberts, 2013).

Although in theory Telkom’s statutory monopoly expired in 2002, in practice, the Second National Operator was not licensed until 2005 and did not commence offering services until 2007, which allowed Telkom to monopolise the fixed line market for a decade. When the SNO (Neotel) was eventually licensed, a policy decision was taken that fixed line infrastructure belonging to SOCs Eskom and Transnet which was to be provided to the SNO to prevent it from having to start building a network from scratch, should instead be given to a brand new state-owned entity, Broadband Infracore (Hawthorne et al, 2016). This slowed Neotel’s expansion and impaired its ability to compete effectively with Telkom.

Government has since acknowledged that there was an implicit objective of protecting Telkom and shielding it from competition. As former Department of Communications DG Lyndal Shope-Malofe stated in response to a question from the Financial Mail on why there had been reluctance to open the telecoms market to competition:<sup>13</sup>

“Why were we protecting Telkom? [It was] so that we could get big value for it because it was going [public on the stock market]. It had to do with bringing investors into a company that is South African.”

<sup>13</sup> My Broadband 19 October 2005, Hell bent on change. Available here.

The intention of managing the introduction of competition so as to encourage the SOC to deliver services efficiently and affordably was therefore undermined in practice by conflicting incentives on the part of the government shareholder. In addition, issues of regulatory capacity and independence, as well as lobbying by the incumbent, Telkom, resulted in the effectiveness of the regulatory process being dampened (Makhaya and Roberts, 2003).

Broadband Infraco (BBI) was created in 2009 as a wholly government owned (split between the DPE and the IDC) telecommunications infrastructure provider, tasked with furthering the goals of access and affordability, specifically with regard to underserved and underdeveloped areas.<sup>14</sup> At the time of its application for Electronic Communications Services (ECS) and Electronic Communications Network Services (ECNS) licenses, BBI's stated aim was to provide affordable access to the long distance electronic communications network infrastructure and broadband electronic communications connectivity services in South Africa by owning and operating a national long distance network and participating in an international connectivity project. BBI would provide lower cost access to these services due to the fact that its shareholders would accept a lower rate of return than would be expected from a private company.<sup>15</sup> It was claimed that BBI would deliver a 95% reduction in cost compared to Telkom within five years (DPE and DOC, 2007).

During the public hearings on the license applications, a number of industry players (including Vodacom and Internet Solutions) raised the suggestion that BBI be restricted to an ECNS license, effectively rendering it a wholesale player only, rather than allowing it to operate at both the infrastructure and services levels of the market as Telkom does. The rationale for this was in order to prevent possible discrimination against competing downstream companies with respect to access to infrastructure, as well as that the services market was already relatively competitive, whereas at the infrastructure level, Telkom was practically a monopoly. Ultimately, however, the regulator granted BBI both licenses.

Although the decision to provide the state-owned infrastructure to BBI rather than selling it to Neotel may have retarded Neotel's development as the SNO, the creation of a third infrastructure player with a specific mandate to lower costs, could have proven to be a positive step for competition and affordability. However, BBI has never managed to delivery adequately on its intended mandate and has remained competitively insignificant. Its financial performance has been dismal; it has made losses in every year from 2010 to 2016, several of which were substantial (70% in 2011, 76% in 2013 and 67% in 2015), and although its revenue has grown over time, this has not translated into a sustainable business model (see Figure 2). Its revenues in 2016 amounted to R542 million, compared to Telkom's R37 billion.

Nor has it invested in expanding access in underserved areas to the extent required. BBI only reported its capex spend from 2013 onwards, but over the period 2013 to 2016 it spent a fairly substantial 36% to 66% of revenues on capital investments. In absolute terms, however, its investments range from R136 to R199 million, compared to Telkom's average investment of R5.8 billion per year. In addition, BBI has imposed a cost on the fiscus. By 2016 it had accumulated R1.8 billion of shareholder loans from DPE and the IDC, on which no repayments have ever been made (BBI Annual Reports, 2008 – 2016). BBI is therefore an example of an

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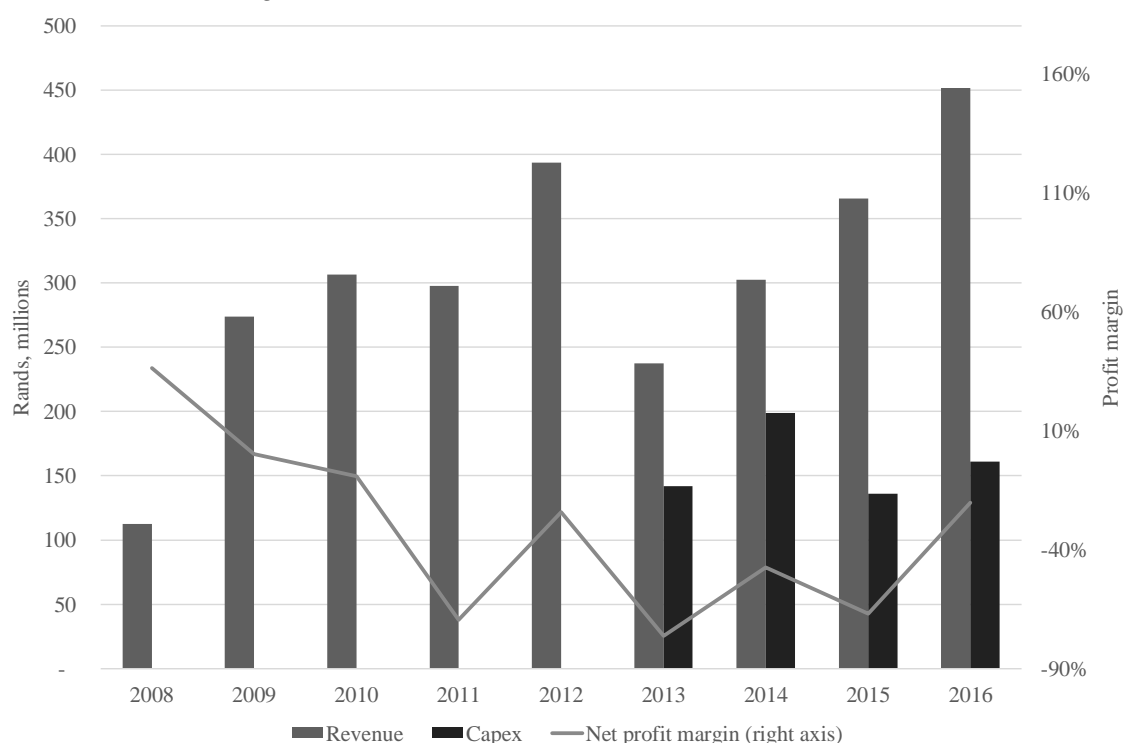
14 See Broadband Infraco Act, Section 4(1).

15 ICASA Reasons for Decision in BBI license application, March 2010. Government Gazette No. 33094. Available here.



opportunity lost to stimulate greater competition and investment in infrastructure which would lower the cost of access to services.

Figure 2: BBI's financial performance, 2008 – 2016



Source: BBI Annual Reports

Note: BBI did not report capex spend prior to 2013

### Regulating for competition

Policy and regulation in favour of Telkom has continued to be a stumbling block to competition in the sector and one which has, in several cases, only been removed as a result of private litigation. In 2008, Altech brought a case against the Minister, ICASA and preferred licensees over the issue of whether or not licensees could provide their own facilities (self-provide). Following ministerial intervention, ICASA had indicated that only selected VANS who would receive special licenses would be allowed to self-provide, with no clear criteria for how these licensees would be chosen (Gillwald et al, 2012). The court found in favour of Altech, stating that ICASA's approach was inconsistent with the ECA. This case provides another example of government choosing to protect its shareholding at the expense of competition, lower prices and innovation (Makhaya and Roberts, 2013).

Following the Altech judgement, there was a wave of entry by new VANS players (Hawthorne et al, 2014). The decision effectively gave ISPs alternatives to using Telkom's infrastructure in building their networks, which allowed them to compete with Telkom more effectively at the access level. However, Telkom still controlled the majority of "last mile" connections to customers, meaning that they still relied on Telkom in order to reach customers. In many countries, the problem of access to last mile infrastructure being controlled by the dominant incumbent has been dealt with by a regulatory approach known as local loop unbundling (LLU), which is:

“a regulatory process which allows multiple telecom providers to use connections between the fixed line operator’s network and the customer’s premises. Unbundling of the local loop is intended to facilitate services-based competition, stimulate innovation, lower the price of telecommunications and offer consumers and businesses a variety of access options for ICT services.” (Hawthorne, 2014: 137)

It is an important step in creating a level playing field for new entrants by granting them access to the incumbent’s network of “last mile” infrastructure. This is the most expensive part of the network to replicate and exhibits natural monopoly characteristics which means it would not be efficient for new entrants to duplicate the infrastructure. Hence LLU has been implemented in most developed countries and in Europe it has been a requirement of EU competition policy in telecommunications for member states since 2001. In its submission to the ICASA hearings on competition in the sector, Neotel identified a number of advantages to LLU for South Africa. These include an increase in innovation around broadband services provided using copper local loops; likely new entry; cheaper broadband due to increased competition for the provision of services to consumers and SMEs; higher broadband penetration amongst consumers and SMEs, supporting SME development; and, increases in investment and employment as operators invest in rolling out infrastructure to the incumbent’s exchanges (Neotel, 2014).

In South Africa, LLU has been an explicit part of government policy on telecommunications since 2007 when the Minister of Communications issued a policy direction calling for the completion of LLU by 2011 (Department of Communications, 2007). The legal framework to support LLU exists in the form of the Electronic Communications Act of 2005 (ECA). Despite this, the process to open up the local loop has not yet started, despite ICASA having published a draft framework for LLU and held hearings on the issue in 2011. ICASA also published draft LLU regulations in 2013 and held a public workshop in early 2014 to consider the issue of wholesale access. The regulations are, however, still in draft form.

Facilities leasing regulations are similarly important in terms of encouraging entry and competition in the context of high fixed costs and network effects. For this reason, the ECA requires licensees to lease facilities (including wires, cables, antenna, masts and radio apparatus) to any other licensee where it is technically and economically feasible, defined as “*not having adverse material consequences*”. Despite the fact that interconnection and facilities leasing guidelines were drafted as early as 2000, they were only published finally in 2010.<sup>16</sup> Even now, the interpretation of the ECA has not been tested in practice as no disputes have been brought before ICASA or the CCC (Hawthorne, 2015). Cell C noted in its submission to ICASA’s hearings on competition in the sector that its experience has been “*that requests for facilities from each of our competitors (MTN, Vodacom, Telkom and Telkom Mobile) are frequently met with resistance or outright refusal*” (Cell C, 2014).

Regulatory interventions such as LLU and the enforcement of facilities leasing regulations to promote access to infrastructure and lower barriers to entry are commonplace internationally, due to an understanding that the high fixed costs of entry in the telecommunications industry, together with switching costs and network effects, result in very significant barriers to entry for new players and can provide incumbents with durable market power. In South Africa, failure to implement these basic regulations has imposed a cost on the economy in terms of dampening rivalry (Hawthorne et al, 2016). It is clear from the above that the only intervention which successfully stimulated greater entry and competition to-date has been brought about

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16 Government Gazette No 33252.

by a private party (Altech) and, by contrast, regulation has consistently failed to lower barriers to entry and encourage competition to Telkom in a meaningful way.

#### Abuse of dominance

In addition to the policy and regulatory environment tending to favour the incumbent rather than potential entrants, it created the incentives and ability for Telkom to engage in conduct which would further entrench its monopoly position and prevent the growth of potential rivals. In 2002 the Commission received a complaint against Telkom from the South African Value Added Network Services Association (SAVA) and 20 other internet service providers (ISPs). The Commission found that Telkom had:

- Refused to supply essential access facilities to independent VANS providers which were its downstream competitors;
- Induced its customers not to deal with these competitors;
- Charged its customers excessive prices for access services; and
- Discriminated in favour of its own customers by giving them a discount on distance related charges which it did not advance to customers of the independent VANS providers.

Telkom challenged this referral in the High Court on various grounds, including the jurisdiction of the Tribunal to hear the case. Telkom argued that the relevant jurisdiction to investigate the complaint lay with ICASA and not the competition authorities. Following legal proceedings lasting several years, the SCA eventually rejected Telkom's argument and referred the matter back to the Tribunal to be heard, finding that the competition authorities not only had the required jurisdiction but were also the appropriate authorities to deal with the complaint referred.

Eventually in August 2012, the Tribunal found that Telkom had abused its dominance by leveraging its upstream monopoly in the facilities market to advantage its own subsidiary in the competitive VANS market and that Telkom's conduct had caused harm to both competitors and consumers and impeded competition and innovation in the dynamic VANS market. The Tribunal imposed an administrative penalty of R449m on Telkom for this conduct<sup>17</sup>.

In the meantime, the Commission had been investigating a second complaint against Telkom. Between 2005 and 2007, complaints were received from Internet Solutions, Multichoice, Verizon and the Internet Service Providers Association. The Commission's investigation found that Telkom had once again abused its dominance by engaging in a margin squeeze where it had charged prices for the wholesale services used by first tier ISPs to construct their internet access and IP VPN services which precluded cost-effective competition with Telkom Retail's own internet access and IP VPN services. Telkom had also engaged in anti-competitive bundling by selling its IP VPN and internet access services together with Diginet and ADSL access services that were priced far lower than the equivalent access services which end customers would purchase when considering the purchase of IP VPN and Internet access from other licensed operators.

Following the Tribunal's ruling on the earlier case, the Commission negotiated a settlement with Telkom which included an admission of guilt, a further penalty of R200m and, perhaps most importantly, structural and behavioural remedies aimed at preventing Telkom from pursuing similar conduct in future and ensuring that competitors are able to access the

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<sup>17</sup> Tribunal case number: 11/CR/Feb04

services they need from Telkom on equivalent terms to Telkom's own retail division. These remedies included the implementation of a functional separation between Telkom's retail and wholesale divisions and a transparent transfer pricing programme to ensure non-discriminatory service provision by Telkom to its retail division and ISPs. Finally, Telkom agreed to wholesale and retail pricing commitments for the next five years estimated to yield R875m savings to customers. The settlement was confirmed by the Tribunal in July 2013<sup>18</sup>. These decisions and the remedies associated with them were important in preventing Telkom from continuing to exclude its VANS and ISP rivals and thereby creating a more level playing field for competition.

The experience in the South African telecommunications sector therefore tends to bear out the prediction of economic theory discussed in section 3; namely that SOCs may have strong incentive and ability to abuse their dominance in order to stifle competition. Given their important social mandates, this state of affairs is highly undesirable and should be dealt with explicitly in an SOC policy, as will be discussed further in section 4.

#### The impact of competition

In spite of the explicit protection of Telkom, the competition unfriendly policy and regulatory environment and anti-competitive conduct of Telkom, the extent of competition has grown over time, due to developments such as the Altech judgement and others. As discussed above, the SNO (Neotel) was licensed in 2005 and entered the market in 2007, around the same time as Dark Fibre Africa, a fibre network provider, entered the market and began to roll out its network in South African cities.<sup>19</sup> The Altech judgement, discussed above, came in 2008. The cost of international bandwidth fell substantially following the introduction of competition in the form of three new undersea cables – SEACOM in 2009, EASSy in 2010 and WACS in 2012.<sup>20</sup> The Competition Tribunal decisions on Telkom's anti-competitive conduct came in 2012 and 2013, around the same time as FibreCo and the NLD consortium (made up of Vodacom, MTN and Neotel) started work on new long-distance links which were operational from 2013. FibreCo estimates that the entry of these two competitors on the Bloemfontein to Johannesburg link (one of which was open access) led to an 87% reduction in the price of transmission (Hawthorne et al, 2016).

Figure 3 illustrates the price of ADSL data usage per GB from 2003 to 2016 as well plotting these important competitive developments which have occurred over the period and shows that from 2009 onwards, the price of ADSL usage fell dramatically. We cannot assign causality for the fall in data prices to one or more of these developments, but what is clear is that the dramatic decline in prices was concurrent with increases in competition in international, national and metro bandwidth as well as retail competition for consumers. Most, if not all, of these developments occurred in spite of the policy and regulatory environment rather than because of it. Some of the most important interventions (the Altech judgement and the two competition cases) required litigation in order to achieve a more level playing field for competition. This illustrates the potential benefits to the economy which could be achieved if policy and regulation, particularly around SOCs, was geared to promote and protect competition instead of to support the incumbent.

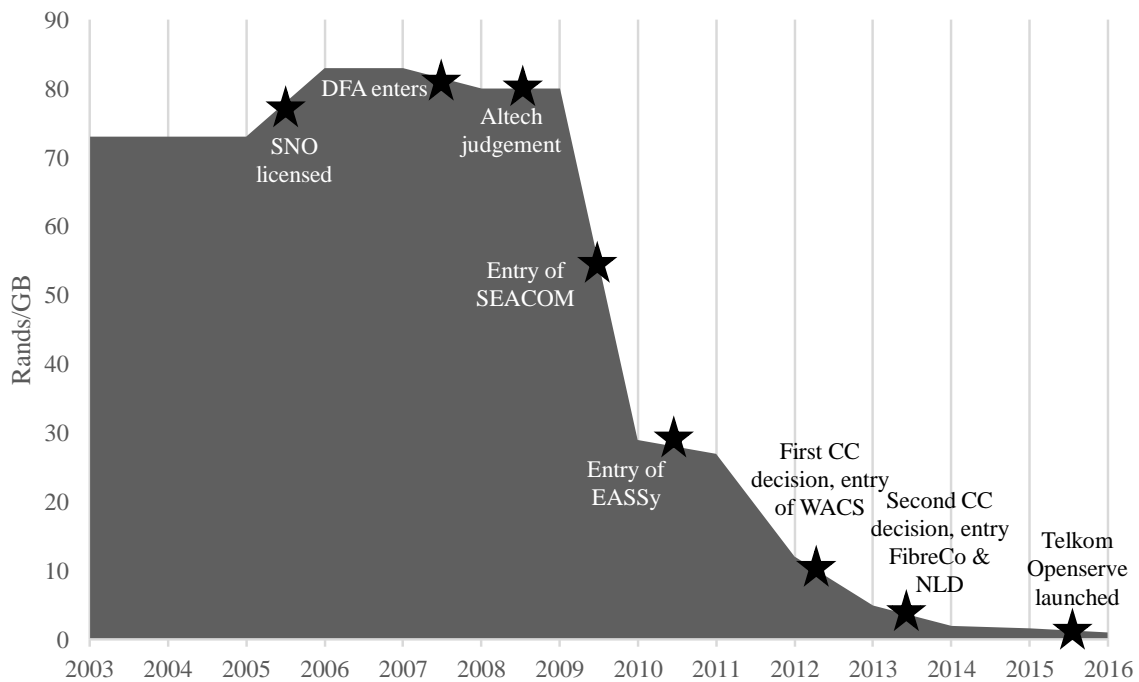
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18 Tribunal case number: 016865

19 See DFA website, available here.

20 My Broadband, 5 June 2014. How South Africa is connected to the global internet. Available here.

Figure 3: Average ADSL usage prices per GB, 2003 - 2016

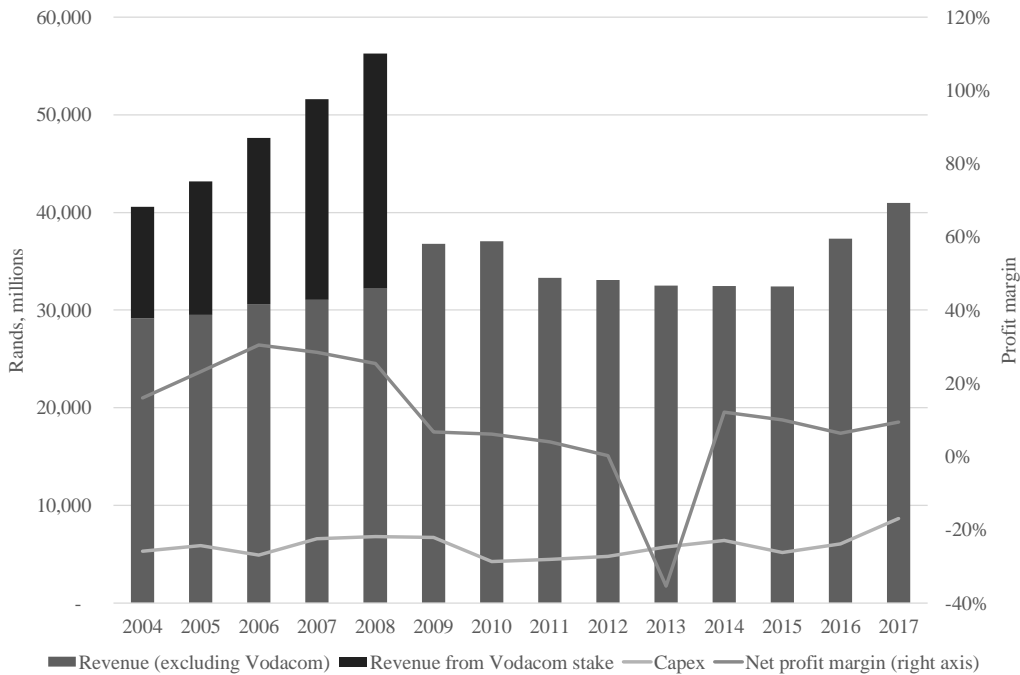


Source: MyBroadband, available [here](#) and authors' own additions

Telkom's financial data indicates that the increasing levels of competition have had an impact on its revenues and profitability. As illustrated in Capital expenditure averaged R5.8 billion per year over the period, or 15% of revenues, increasing slightly from 2013 onwards.

Figure 4 4, in nominal terms, revenue increased strongly from 2004 to 2008, before falling substantially in 2009, due to the sale of Telkom's stake in mobile operator Vodacom. Excluding Vodacom revenues, however, group revenues continued to grow until 2010, before declining until 2015. In 2016 and 2017, revenue increased strongly again due to the acquisition of Business Connexion (BCX) (shown as "other" revenue in Figure 2). Telkom's net profit margin peaked in 2006 at around 20% before falling to very low levels in 2012 and turning negative (-35%) in 2013. From 2014 to 2016, Telkom has achieved a small positive net profit margin of between 6% and 12%. Capital expenditure averaged R5.8 billion per year over the period, or 15% of revenues, increasing slightly from 2013 onwards.

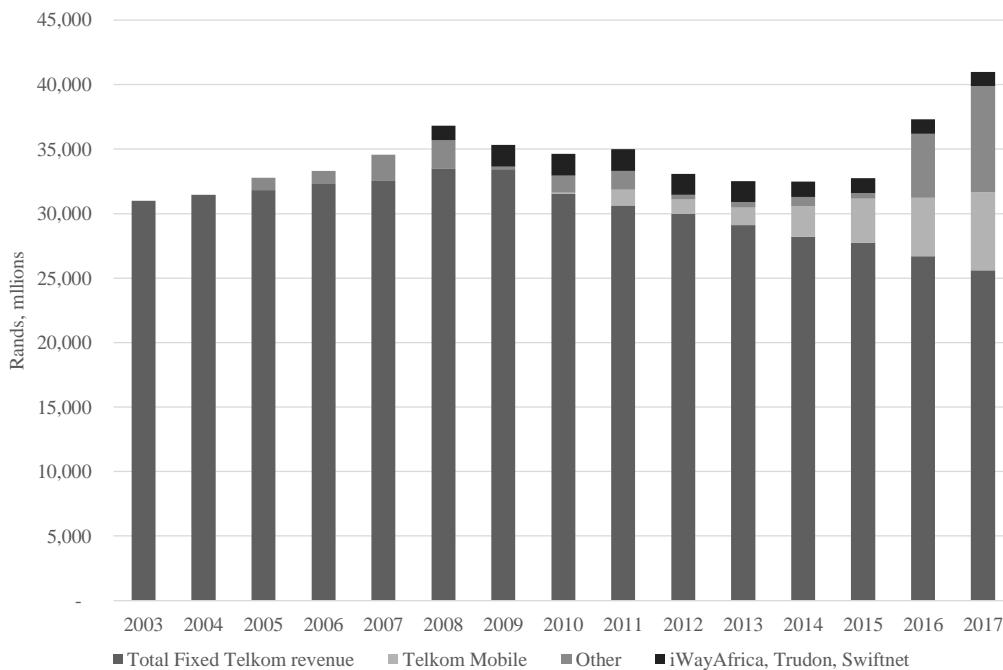
**Figure 4: Telkom's financial performance, 2004 – 2016**



Source: Telkom Annual Reports

Figure 5 sheds further light on the decline in revenues and profitability from 2010 onwards. Fixed line revenue declined steadily from 2009 onwards, despite remaining the largest portion of revenue throughout the period. This may be a partial consequence of the increasing competition at different levels of the fixed line market described above. At the same time, mobile revenue has grown substantially, from around R80 million to over R6 billion, as Telkom Mobile has grown in size and competitive importance.

**Figure 5: Breakdown of Telkom revenues, 2003 – 2017**



Source: Telkom Annual Reports and Results Booklets

Note: Vodacom revenues are excluded

In spite of the gains which have been made in terms of competition, there are still competition problems at the wholesale level, where Telkom has a continuing monopoly in terms of local loop infrastructure for ADSL. While the cost of data has fallen as retail competition has increased, ADSL line rental costs have not fallen in the same way. In fact, until recently, Telkom still required ADSL-only users to pay for analogue line rental on top of their DSL access fee and data (in other words to pay for a telephone line which they were not using) – at a cost of just under R200 per month.<sup>21</sup> Fibre is being rolled out to homes and businesses which provides consumers with an alternative, but does not cover a significant portion of the population. As well as offering higher speeds and a more stable connection, fibre is also substantially cheaper in many cases than ADSL.<sup>22</sup> When Telkom entered the fibre market, its own fibre was cheaper than its ADSL products, partly due to the fact that fibre customers were not forced to purchase analogue line rental which they did not use.<sup>23</sup> The implementation of local loop unbundling would remove Telkom's ability to do this once and for all.

The long-standing policy and regulatory trend of protecting Telkom, combined with its own anti-competitive conduct over the years, stifled competition in the fixed line telecommunications sector and slowed the process of entry, keeping prices high. Figure 3 illustrates the extent to which data usage costs have fallen, and could have fallen sooner if strong competitive reforms had been made. In addition, last mile infrastructure costs are still of concern due to the lack of LLU.

A lack of competition also typically leads to less choice for consumers, poor levels of service and a lack of innovation. This has been the case in the South African fixed line sector and has resulted in South Africa performing consistently poorly in terms of international internet speed and quality benchmarks. South Africa's average broadband speeds have generally been much lower than speeds in comparator countries such as Brazil, China, Russia and Turkey (Hawthorne et al, 2016). Rather than contributing to the provision of affordable and high quality broadband to all consumers therefore, South Africa's SOCs have been at best ineffective and at worst actively worked against the achievement of these goals through their attempts to deter entry and impede rivalry. This motivates for an explicit competition policy towards SOCs which can ensure that policy objectives are met without the severe distortions to competition which have resulted in the past.

Universal service: different models and competition implications

As illustrated above, South Africa's attempts to expand access in terms of fixed line connections has been unsuccessful to date. Partly as a result of this, the statistics in terms of access to the internet are extremely poor. According to the General Household Survey 2014, only 48.7% of households in South Africa had at least one member of the household who used the internet at home, work, a place of study or an internet café. Although this had increased from 32.9% in 2011, the extent of access is still extremely low.<sup>24</sup> In addition, outside of Gauteng and the Western Cape, less than 10% of households accessed the internet at home. In Limpopo only 32.6% of households accessed the internet by any means, and in the Eastern

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21 My Broadband, 27 March 2017. How much more you will pay for your ADSL package from 1 April. Available here.

22 My Broadband, 6 March 2017. Uncapped Prices – Fibre vs ADSL. Available here.

23 My Broadband, 7 June 2016. Telkom fibre now cheaper than ADSL. Available here.

24 Statistics South Africa General Household Survey Report, 2011 and 2014.

Cape, 37.4%. Although recently focus has been largely on the reasons people are not accessing the internet via mobile devices, an equally relevant question is why there has not been a greater expansion of affordable fixed line services. The rationale for having a state-owned telecommunications provider at all is undermined by this poor track record.

To understand the ways in which competition can help to improve and lower the cost of universal service mechanisms, it is useful to consider the alternative approaches used by different South African municipal and provincial broadband projects which have been rolled out in recent years. A problem which has been observed where government has built its own infrastructure with the intention of providing broadband through a state-owned entity is that these have sometimes proven to be expensive and duplicative of private infrastructure investment.<sup>25</sup> One such project, the City of Johannesburg's "Broadband Network Project", involved rolling out 900km of fibre across all the regions in the City to bring broadband access to low-income areas not considered viable for coverage by private firms.<sup>26</sup> However, large parts of the network duplicated existing infrastructure, including that of Dark Fibre Africa, an open access provider of fibre infrastructure (Hawthorne et al, 2016). In addition, the project has been claimed to be extremely expensive.<sup>27</sup> A contractual dispute with the company charged with building and operating the network resulted in the City purchasing the network in 2015 for R1.2bn.<sup>28</sup> This resulted in a cost of rolling out the network of around R1.33 million/km. By contrast, FibreCo built a 1000km long-haul fibre route at a cost of roughly R700 000/km and DFA's network of 8353km is valued at about R5bn, which gives a rough value of R600 000/km (Hawthorne et al, 2016).

On the other hand, rather than owning the assets itself, government can act as an aggregator of demand or "anchor tenant" to encourage broadband rollout to areas which would otherwise have remained underserved by the private sector. This was the approach taken by the Western Cape Provincial Government (WCPG), which issued a tender for a private sector provider to connect 2000 government sites (including 1250 schools, 220 libraries, and 300 health facilities) across the Western Cape. The tender was awarded to Neotel in 2014 and the rollout commenced as a partnership between the provincial government, the State Information Technology Agency (SITA) and Neotel.

Importantly, the aim of the rollout was not to build an extensive network across the whole province, but to complement existing infrastructure and extend fibre to areas not covered by public or private players, on an open access basis.<sup>29</sup> This also informed the decision to manage the rollout as a public-private-partnership with a ten-year management contract, rather than following a build-operate-and-transfer model, which would leave the Province owning a fragmented network upon completion of the rollout (Hawthorne et al, 2016). As Geerts et al (2016) point out, such an approach is also more sustainable, as the private sector partner is encouraged to pursue other commercial opportunities to increase revenues, compared to the state funded model where the state has to continue to provide funding

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25 See for example, My Broadband, 20 June 2017. 'Why the Tshwane free Wi-Fi project is so expensive – R320 million for 1050 sites', available here; IT Web, 6 February 2015. ITWeb investigates: Joburg's R1.2bn broadband 'white elephant', available here.

26 Fin24, 5 October 2015. City of Joburg eyes wider fibre roll-out. Fin24. Available here.

27 IT Web, 6 February 2015. ITWeb investigates: Joburg's R1.2bn broadband 'white elephant'. Available here.

28 IT Web, 6 March 2014. 'ITWeb investigates: Unravelling BWired's network shenanigans.' Available here.

29 BMI Techknowledge. Western Cape Broadband Projects. Available here.



indefinitely. In addition, Neotel is partnering with local wireless ISPs (WISPs) to connect some areas. This approach is more in line with the international best-practice discussed in section 3 and is likely to contribute to a lower-cost, more sustainable outcome for government, due to the competitive tender process.

#### Expanding broadband access: monopoly or competition?

The successes and failures which have been described above clearly highlight the benefits to consumers and the economy which can be delivered through the effective stimulation of competition and, conversely, the costs imposed when the presence of SOCs results in the distortion of competition. They also provide useful lessons around how (and how not) to ensure that SOCs deliver on their mandate effectively while at the same time a competitive market is maintained and encouraged. These lessons have particular relevance to recent policy developments, where it seems there is a danger of some of the failures of the past being repeated.

Two developments are particularly concerning in this regard. The President announced in the 2015 State of the Nation Address that Telkom will be the “lead agency” in delivering broadband rollout targets set in the SA Connect policy document, although subsequently there has been confusion around this and it is unclear what such a role could mean in practice.<sup>30</sup> As Telkom has by far the most extensive infrastructure network in South Africa, it is naturally seen as a key player in expanding access to broadband services. However, as Mondliwa (2016) notes, Telkom’s role should involve providing access to its infrastructure at competitive prices, and the rollout of broadband services should not result in Telkom’s dominant position in the fixed line sector being further entrenched. Experience has shown that a model where the demand for broadband to government sites on a local or regional basis is used as an “anchor tenant” to subsidise broadband rollout on a commercial basis is likely to be more cost-effective than assigning the whole responsibility for rollout to one entity. The use of Telkom’s existing infrastructure would be a vital component of such an approach and lower the costs of expanding access.

In the mobile sector, an even more concerning intervention has been proposed in the ICT Policy White Paper which motivates for the creation of a “wholesale open access network” or WOAN which could ultimately become a monopoly upstream provider of wholesale network services, in order to reduce costly duplication of infrastructure and encourage the expansion of access. There are a number of concerns with such a model, not least that it would result in the removal of infrastructure-based competition which has been shown internationally to be of critical importance to maintaining rivalry at the retail level. It is generally seen as important to have at least a handful of competitors at the facilities level which, combined with regulation where necessary, delivers effective competition at the retail level. South Africa’s history highlights the dangers of relying on a monopoly infrastructure provider to drive access and affordability. In addition, a recent study illustrated that similar approaches which have been attempted internationally have not been successful (GSMA, 2017). The model for the proposed WOAN is still unclear, but may involve the WOAN being jointly owned by the mobile operators and government. This raises an additional concern around possible coordination and a dampening of competition in the downstream market, exacerbated by the fact that

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30 My Broadband, 21 February 2016. Don’t give Telkom R744-million broadband contract. Available here.

operators will no longer be able to distinguish themselves competitively based on their network.

By contrast, an approach which assigns as much spectrum as possible to mobile operators while providing opportunities for smaller operators and new entrants to acquire spectrum would be more effective in promoting competition and lowering the cost of mobile broadband (Robb, 2017). Indeed, new infrastructure players, Neotel and Rain, have emerged with no assistance from government. This suggests that the government's proposed WOAN is unnecessary and may be counter-productive.

It seems likely that these policy developments are again the product of the government's wish to use its SOCs to deliver on access goals, however, its proposed ways of going about this risk being anti-competitive and repeating the mistakes of the past. Rather, government should seek to learn from international experience and best practice around the ways in which regulators can use competition to deliver better outcomes in telecommunications markets. SOCs are a part of this solution in providing affordable access to infrastructure and thus lowering barriers to entry and stimulating greater competition.

### **3.2 Energy**

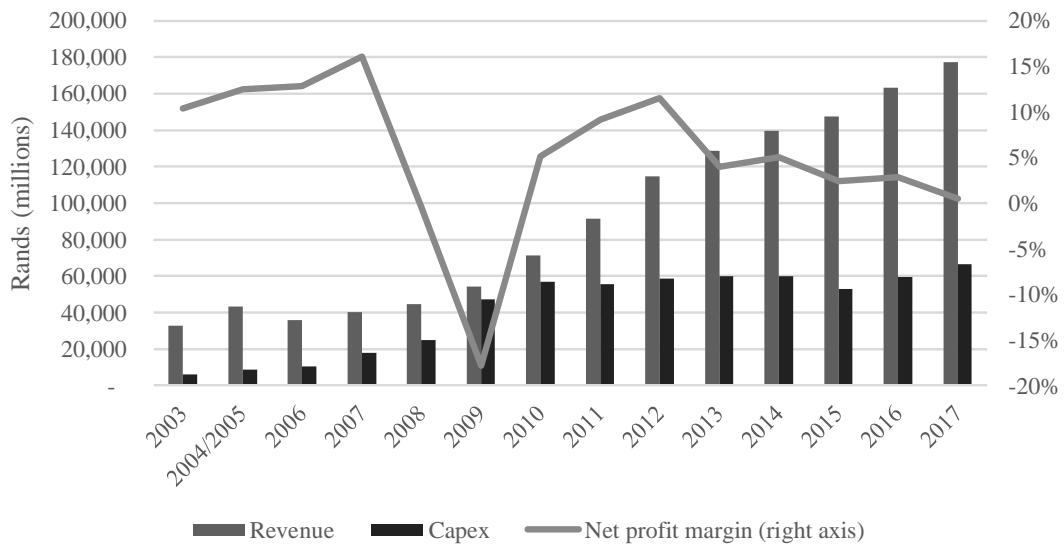
The energy case study focuses on Eskom and Transnet Pipelines. The electricity case study assesses the extent to which Eskom has shaped the market for power generation and whether its rationale has been extended to exclude rivals and undermine competition even while it has an important role in developing services, taking long term investment decisions and providing essential facilities. The lack of pro-competitive reforms in the electricity sector have also had a negative impact on South Africa's ability to meet wider policy goals, such as the reduction in carbon-intensity of the economy. The pipeline example illustrates the ways in which rivalry can be undermined where economic regulation focusses only on the incentives facing existing incumbents, and ignores the impact of regulatory decisions on potential competitors.

Conflict of interest vs. competition: Eskom as the single-buyer of electricity

Eskom is a vertically integrated power utility, controlling the generation, transmission and distribution of electricity in South Africa. Eskom's revenues have shown strong growth over the years and this is partly a result of the increases in electricity tariffs that have been approved since 2008 to fund significant investments in capacity (Figure 6). Between 2007 and 2016 electricity tariffs increased by 374% in nominal terms and 168% in real terms. During this same period, electricity sales declined due to a number of factors including load shedding and lower economic growth. Between 2007/8 and 2015/16 demand from the industrial and mining sectors which account for over 40% of Eskom's sales decreased by 26%. Some industrial customers had already switched to natural gas, when it was introduced in the early 2000s.

Except for 2009, Eskom has recorded a positive net profit throughout the period 2007-2016 (Figure 6) but its profits have declined since 2007 (with a brief recovery between 2010 and 2012) despite increased revenues. At the same time, Eskom has embarked on a significant capital expansion programme, with capital expenditures amounting to between 36% and 87% of revenues from 2007 to 2017, and an average capital expenditure of R50.1 billion per year over the same period. Eskom is a large employer in the South African economy.

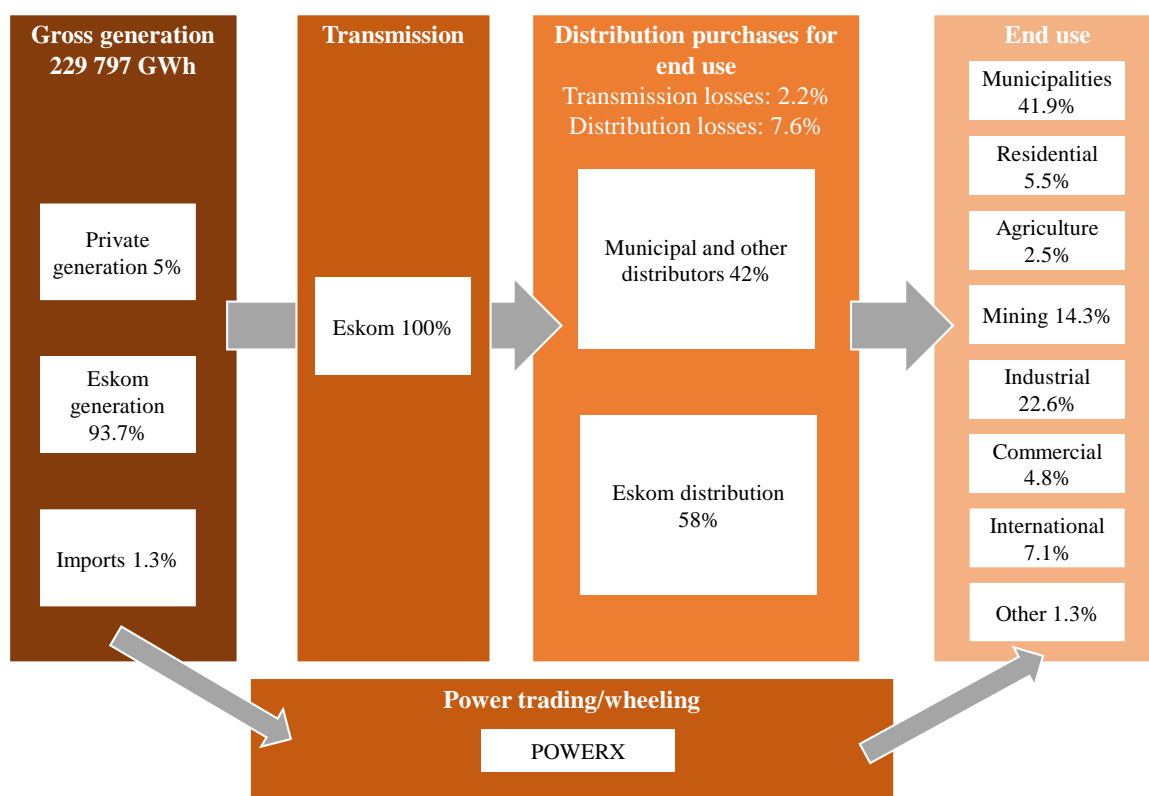
**Figure 6: Eskom's financial performance**



Source: Eskom Annual reports

Eskom is a vertically integrated monopoly, controlling the generation, distribution and transmission levels of the value chain, as illustrated in Figure 7. IPPs play a small role at the generation level (5% of total generation in 2017), while municipalities participate in distribution, a vital source of revenue to some local authorities. In reality, however, there is very little effective competition to Eskom at any level of the value chain due to the way that policy and regulation has favoured the state-owned provider. One player, POWERX, has been awarded a trading license by NERSA, which allows it to purchase electricity from generators and sell it to municipalities and other customers, which requires it to wheel electricity over transmission and/or distribution networks. This puts it to some extent in competition with Eskom. However, there are a number of factors limiting the expansion of these activities which will be discussed further below.

**Figure 7: the electricity value-chain**



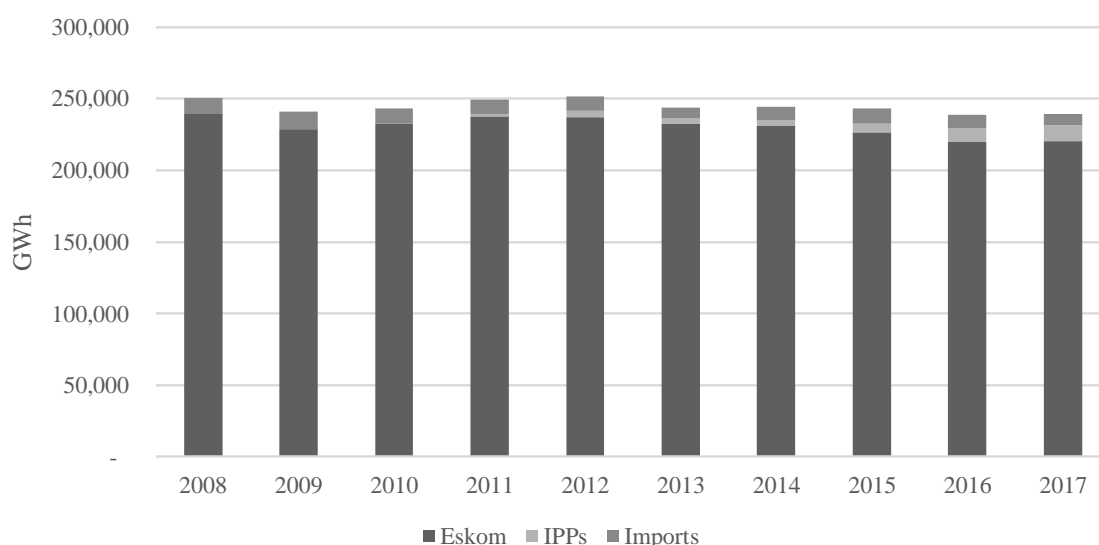
Source: Based on Das Nair et al (2014), updated using Eskom Annual Report 2017

Debate around the best manner of introducing competition in the South African electricity sector has ongoing throughout the last 20 years as, around the world, countries have moved to liberalise the sector. Pro-competitive reforms introduced elsewhere include the unbundling of the transmission network; the breaking up or divestiture of generation assets; the introduction of electricity trading markets; and the requirement for non-discriminatory access to networks (Prometheum Carbon, 2016). Countries have implemented some or all of these reforms, and reforms have typically been implemented in a staged manner, with the first phase involving separating generation from transmission and distribution, as well as the introduction of a single buyer which will purchase electricity from competing generation companies (Prometheum Carbon, 2016). As liberalisation progresses, the single buyer model can potentially be replaced by wholesale and/or retail competition and some customers may be permitted to purchase directly from generation companies.

The White Paper on Energy Policy of 1998 committed to encouraging private sector participation in the electricity industry through independent power producers; encouraging competition and restructuring of Eskom; and permitting open, non-discriminatory access to the transmission system. The Electricity Regulation Act (ERA) of 2006 formalised the commitments made in the white paper by providing for the minister of energy to determine that new generation capacity is needed and requiring that private sector participation and that the electricity must be purchased by a designated buyer (Eskom). The ERA also provides for non-discriminatory access to the transmission and distribution power systems to third parties, to enable private participation in electricity generation. The non-discriminatory access provision is necessary as the transmission and distribution networks are an essential facility and this is where Eskom enjoys a natural monopoly.

The ERA was intended to ensure the non-discriminatory treatment of the IPPs by Eskom, but no further policy or regulatory progress was made towards reform. In 2003, a cabinet decision suggested that future power generation capacity should be divided 70:30 between Eskom and IPPs, but again, no policy or regulatory interventions followed. In 2007, Cabinet designated Eskom as the single buyer of power from IPPs in South Africa, entrenching Eskom’s position as the gatekeeper of competition in generation and effectively ensuring that any competition which does arise will be extremely limited. This is reflected in Figure 8 and Figure 9 which illustrate that the proportion of electricity generation and capacity provided by IPPs has grown very slowly, reaching 10% of nominal capacity but only 5% of generation by 2017.

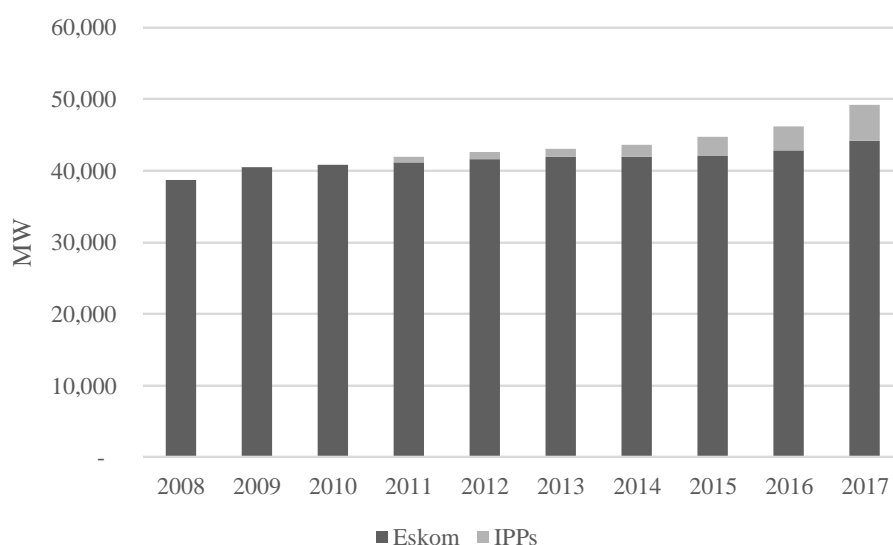
**Figure 8: electricity generation by source, 2008 -2017**



Source: Eskom annual reports

A proposal to unbundle power generation from transmission was made in the form of the Independent System Operator (ISMO) bill, which would have resulted in an unbundled operator to invest, operate and maintain the country’s high voltage transmission grid, as well as conduct generation resource planning and buy power from generators (Das Nair et al, 2014). This would have encouraged competition at the generation level and removed Eskom’s ability to control entry by rivals. The unbundling of the transmission network into a separate entity is important, as even if Eskom is not the single buyer of electricity any longer, its control of the transmission network and position as incumbent in the generation market could potentially give it the ability and incentive to exclude rivals, through denying them access to the grid or degrading the quality of their access. The ISMO bill was published by the DoE in May 2011 for public comments and was approved by cabinet and tabled for parliament before being revised and resubmitted (Das Nair et al, 2014). It stalled in Parliament, however, and has made no progress since 2014. Although some renewable IPPs have been introduced (as discussed in more detail below), at present Eskom remains a vertically integrated monopoly and the Single Buyer of electricity in South Africa, leaving it in the position of gatekeeper to competitors wishing to enter at the generation level.

**Figure 9: nominal capacity, Eskom and IPPs, 2008 -2017**

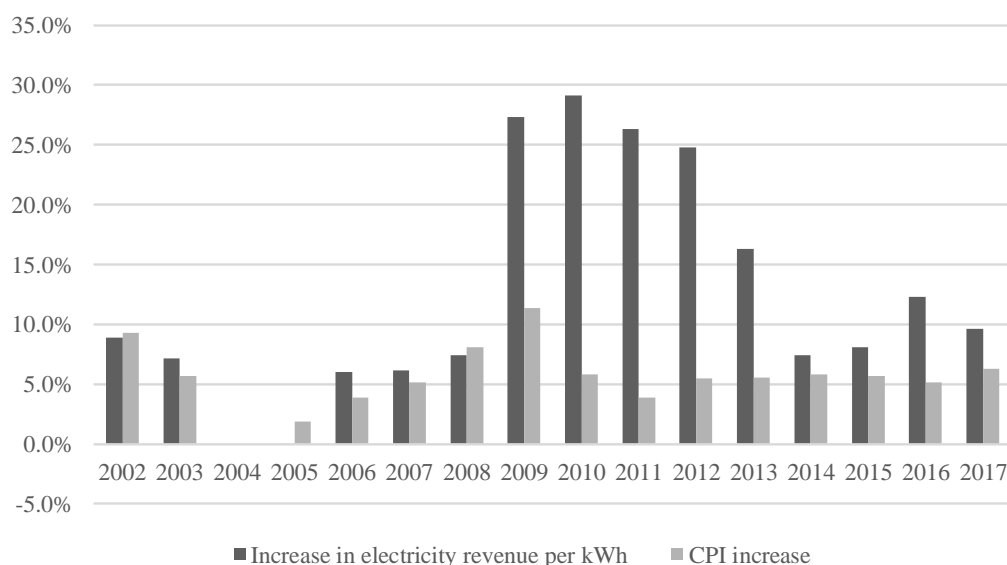


Source: Eskom annual reports

In terms of universal services obligations, Eskom is required to provide access to electricity to all South Africans. Eskom embarked on a large-scale electrification project in 1994 in order to connect South Africans, particularly in rural areas, to the grid. Eskom, continues to connect new households to the grid even though in the more recent years the number of connections a year have been substantially lower. Eskom, is yet to achieve the target of universal access. The electrification connections were previously funded by the Department of Minerals and Energy and now are funded by the Department of Energy. Though the distributional objectives are one of the rationales for Eskom's state ownership, in reality the electrification could put to tender and provided by private firms as they are fully funded by government.

Eskom's tariffs were kept artificially low for a significant period of time due to substantial excess capacity. During this time, long-term pricing agreements were entered into with energy-intensive users which ensured them low prices. This resulted in a poor technical and financial performance (Das Nair et al, 2014), and subsequent under-investment in capacity. Eventually, following rolling blackouts in 2007/08, this led to the need for substantial investment in new capacity. Given the lack of reform in the sector, this has required Eskom to embark on an expensive capital investment programme, including the construction of two large coal-fired power stations, Medupi and Kusile. As a result, electricity prices have risen sharply since 2009 as illustrated in Figure 10, impacting on both firms and household users. Between 2009 and 2013, prices rose by more than 15% per year and from 2009 to 2011 by more than 25% per year.

**Figure 10: Eskom increases in average revenue per kWh vs. change in CPI, 2002 -2017**



Source: Eskom annual reports

One recent development which may have positive implications for competition is the granting of an electricity trading license by the regulator to a private company, POWERX (previously Amatola Green Power). Since 2009, it has been licensed to purchase clean and green power from generators, and sell it on to end users.<sup>31</sup> This came about as part of a pilot project where Amatola secured Power Purchase Agreements (PPAs) with generators and take off agreements with customers, and traded successfully between the two. It was subsequently awarded a trading license by NERSA which has since been extended to 2029. As discussed in more detail in Box 1, this development has been positive from a competition perspective but its further rollout appears to be hampered by the regulatory environment and it is unclear whether further trading licenses will be issued.

Reflective of this lack of clarity, the City of Cape Town recently took the Minister of Energy to court in order to force her to give it permission to buy renewable energy directly from IPPs.<sup>32</sup> It would like to purchase electricity directly from renewables IPPs both to mitigate against the steeply increasing electricity tariff trajectory and also to contribute towards the City’s aim of achieving its goal of sourcing at least 20% of energy from renewable sources by 2020. The City states that NERSA is of the view that in terms of s34 of the Electricity Regulation Act, a determination by the Minister is required for an IPP to establish and operate new generation capacity, and therefore will not license an IPP to establish and operate new generation capacity without a determination. The City claims that such a determination from the Minister has not been forthcoming despite the City’s request in November 2015. The regulator appears to have take a conservative stance on this issue, as opposed to one which would encourage new investment and competition, and the Minister has not clarified the issue.

Further confusion is created by the fact that a number of similar projects (including POWERX’s arrangement with the Nelson Mandela Bay Municipality) appear to have gone ahead without

<sup>31</sup> See POWERX website here.

<sup>32</sup> Notice of motion and founding affidavit in the Gauteng High Court dated 29 July 2017. Available here.

any s34 determination from the Minister. The City points out that, like POWERX, it is in possession of a power distribution and trading license, and as such should be able to procure power from IPPs and sell to customers in the same manner as POWERX. While the City does not agree with NERSA's interpretation of the ERA, it points out that IPPs will not invest without certainty around the licensing issue. Therefore it has approached the court to make a ruling on the s34 question.

A similar regulatory gap currently restricts the development of embedded self-generation, where households and businesses generating power for their own use could feed-in power to municipal networks (Montmasson-Clair, 2017). A clear regulatory framework for these activities would assist in incentivising households and businesses to invest in renewable self-generation, providing them with an alternative to buying power from the grid. This would also assist in meeting South Africa's climate change mitigation goals. There is therefore significant potential for regulatory interventions to open up competition in generation, albeit on a relatively small scale, even without full reform of the sector. These opportunities are currently being under-utilised.

#### Box 1: POWERX and electricity trading in South Africa

Municipalities, including Nelson Mandela Bay Municipality, have given POWERX permission to wheel power over the grid in long term wheeling agreements, which allows POWERX to supply power directly to customers. When it purchases power from IPPs, an independent auditing body called the issuing body (IB) issues a certificate for each 1000kWh (1MWh) of power generated which can then be sold to customers or traded in the voluntary market in South Africa or internationally. In addition to promoting the development of green power generation, municipalities are paid a "use of system" fee per kWh and are able to promote investment and job creation in the region if new renewable projects are stimulated. For customers, there is the benefit of protecting themselves from Eskom-linked price increases. In Nelson Mandela Bay, the municipality aims to provide up to 10% of power in this way, and 5000 MWh per year is wheeled over the municipal network from renewable energy generators to customers (SALGA-GIZ, 2015). The "grid charge" for using the municipal transmission network is set at 20% of the value of power wheeled.

While this is a positive development for competition, volumes traded are still very small. In an environment of dramatically increasing prices for Eskom-generated electricity, we would expect the volumes to expand rapidly, however, further development of the model is hindered by two main factors. The first is difficulty of securing financing for new generation projects without long-term PPAs which customers can be reluctant to sign.<sup>33</sup> This is particularly an issue for small projects, and one of the reasons that government underwrites Eskom's commitments under the REIPP programme discussed below. The second issue is the lack of a developed regulatory framework around network access and use of system fees.<sup>34</sup> It is possible for POWERX to wheel power over municipal networks where agreement has been reached with the municipality concerned, but to wheel power over longer distances and for a true trading market to develop, it would require access to several municipal networks and the national transmission grid, all of which would require compensation for using the infrastructure.

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33 Moneyweb, 24 July 2015. 'Wheeling the power'. Available here.

34 Moneyweb, 24 July 2015. 'Wheeling the power'. Available here.



What rates should be charged for this access and the conditions of access have not been regulated. It is also not clear whether further players will be granted trading licenses.

The REIPP Programme: a successful example of introducing (small scale) competition in generation

The South African REIPP programme has been hailed as a step in the right direction in terms of regulation and policy facilitating competitive outcomes (Montmasson-Clair and das Nair, 2017). However, there are concerns about the role played by vested interests in limiting the impact of the programme. South Africa is heavily reliant on coal as a source of energy and also has a highly energy-intensive economy. The result has been that South Africa's carbon emissions (on a per capita and GDP basis) are disproportionately high. Due to concerns about the risks that the emissions may cause to future international competitiveness, policymakers have included renewable energy in South Africa's power generation mix. This was reflected in the IRP 2010-30, which incorporated a carbon emissions cap and included renewable energy options.

The renewable independent power producer procurement programme (REIPP) was introduced in 2011, in terms of section 34 of the ERA by the Minister of Energy. Notwithstanding the benefits to increasing the proportion of renewables in the energy mix, the programme has been important for a number of other reasons including that it has contributed to private sector funded generation capacity brought on-line in a timely manner, within budget and at predictable prices and it has led to more effective implementation of high impact industrial policy through local content spend (Department of Energy, 2017).

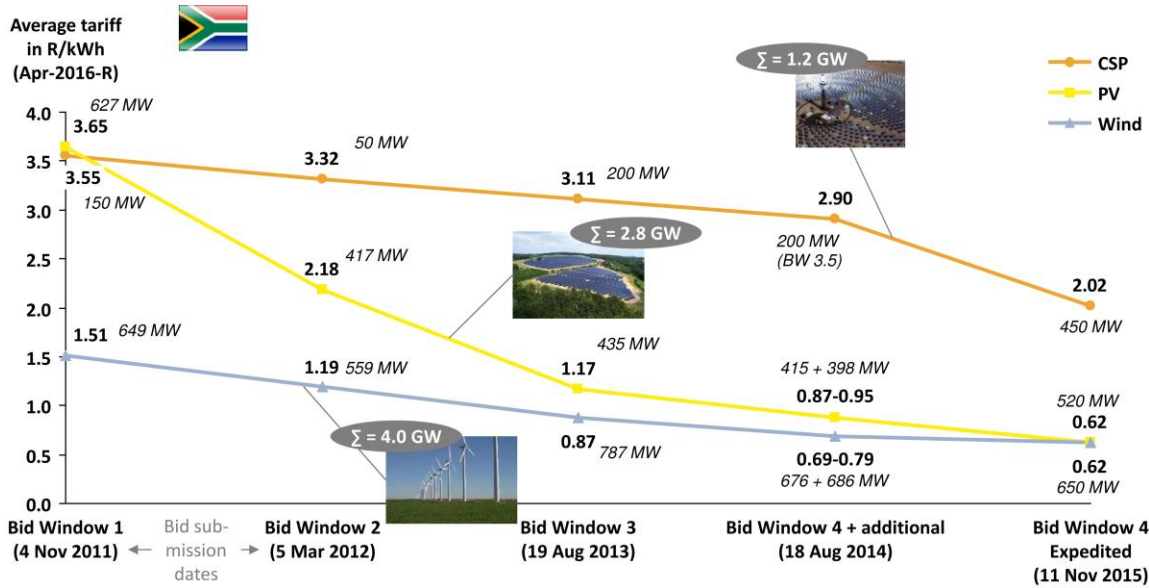
The REIPP was initiated in 2011 as the first meaningful attempt to open up competition in electricity generation in South Africa. At the time, Eskom was responsible for generating 95% of the electricity consumed by the country, the remainder being imported (4%) and supplied by independent power producers (1%).

The programme allocated 14 725 MW of electricity to be procured from IPPs through a maximum of five successive bidding rounds by 2016. It has widely been seen to be a great success, both in terms of succeeding in contracting a wide range of renewable IPPs all over the country and increasing the proportion of power produced by IPPs (see Figure 9 and Figure 10), but also in terms of the competitive bidding process which has seen the prices for renewable power decrease substantially over the successive bidding windows (BWs), as illustrated in Figure 11. The cost of solar photovoltaic (PV) dropped from R3.65/kWh in BW1 to R0.62/kWh in BW4 expedited. Wind power dropped from R1.51 to R0.62 per kWh over the same timeframe.<sup>35</sup>

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35 IT Web, 16 January 2017. 'Eskom 'blatantly distorted' renewable energy costs. Available here.

**Figure 11: Declining price of renewables in the REIPP programme**



Source: CSIR (2017)

However, since 2016 a problem has arisen as Eskom has failed to sign the remaining IPP contracts for bidding windows 4 and 5. Some of the projects have been waiting for contracts to be signed for over 2 years. These delays are despite formal commitments made by both the President in the State of the Nation address and the Minister of Finance in the Budget Speech that the IPP contracts would be signed. It now seems that the contracts are to be signed by the end of October 2017, however, the Energy Minister has stated that Eskom will not sign agreements where the tariff is greater than R0.77 per kWh.<sup>36</sup> Some stakeholders have suggested that this is inconsistent with the rules of the REIPP programme and that they may challenge the decision, as it amounts to renegotiating the tariff determined through the auction process. This may undermine the credibility of future REIPP bidding windows and discourage participation by potential investors.

Eskom has argued that the IPPs resulted in higher costs than can be recovered through tariffs paid by its customers. It argues that the REIPPs would cost the South African consumer more than would otherwise be charged for electricity by adding 4.9% to tariffs, and that it has had to shut down 5 coal-fired power stations as a result of the extra capacity provided by the REIPPs and current levels of excess supply.<sup>37</sup>

However, Eskom's arguments, particularly regarding the cost of renewable energy, have received a lot of criticism. It appears as though Eskom has manipulated the figures in terms of the cost of renewable energy compared to alternatives.<sup>38</sup> In addition to the drop in renewables prices described above, new coal IPPs can generate power at a cost of R1.03/kWh, whereas Eskom's new Medupi and Kusile power stations have current levelled

36 IT Web, 4 September 2017. 'Govt's renewable energy tariff renegotiation 'illegal''. Available here.

37 Herald Live, 21 June 2017. 'Eskom fails to convince MPs on reasons for IPP deals delay' Available here.

38 See IT Web, 16 January 2017. 'Eskom 'blatantly distorted' renewable energy costs, available here; Fin24, 12 January 2017, '5 reasons why Eskom is wrong about renewables costs – CSIR', available here; and CSIR (2017).

cost of electricity (LCOE) estimated at R1.05 and R1.17 per kWh respectively.<sup>39</sup> While Eskom's existing generation capacity may have a lower average cost, wind and solar PV are now cheaper than coal for new build electricity generation and so it is hard to argue that they should not be part of the energy mix going forward as new capacity is required. The CSIR conducted an independent study on the least cost energy mix for South Africa, and came to a different conclusion to Eskom, showing that adding substantial renewables to the mix will lower the total generation costs compared to alternatives over the period to 2050 (CSIR, 2017).

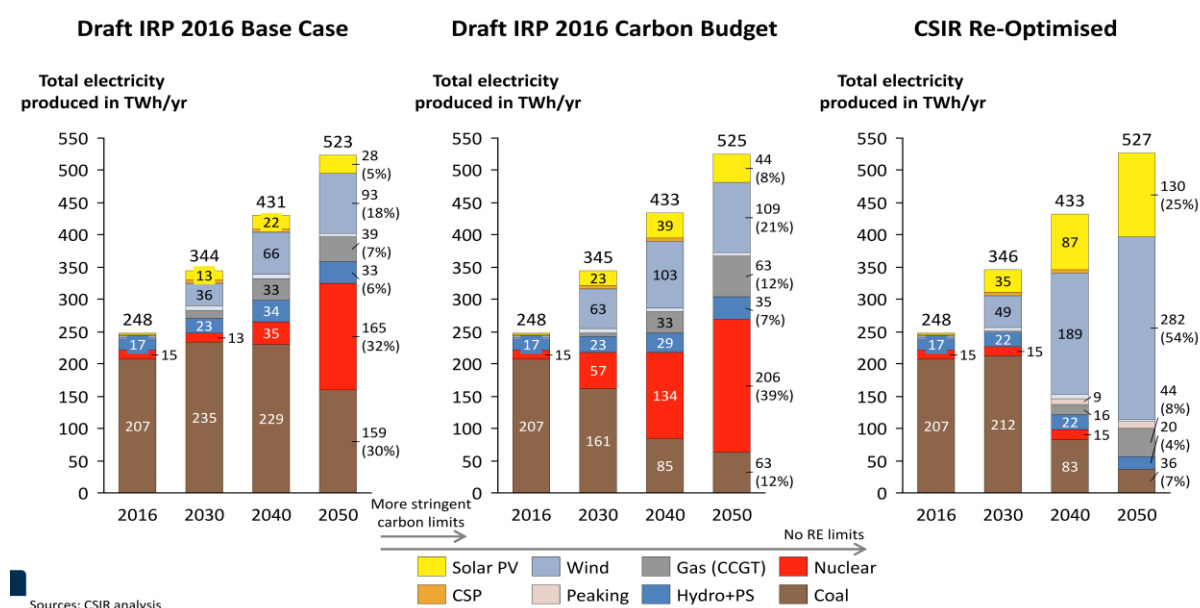
In addition, it is important to note that the cost of renewable power from the different rounds of the REIPP programme has been factored into Eskom's tariff determination by the regulator and Eskom has been provided with assurances from the regulator that it will continue to be allowed to include the cost of renewable PPAs in its regulatory asset base. NERSA's draft MTPD4 Methodology document confirms that "*Purchases or procurement of energy and capacity from IPPs, including capacity payments, energy payments and any other payments as set out in the PPA, will be allowed as a full pass-through cost*" and further that "*Use-of-system charges incurred by the buyer in line with the PPA from IPPs will be allowed as a full pass-through cost*" (NERSA, 2016a). As such, it is hard to see how Eskom can claim that the cost of renewables is a problem.

The CSIR study mentioned above suggests that adding more renewables to the energy mix is the best way to lower the cost of generation capacity over the next 30 years. This is in contrast to the Integrated Resource Plan (IRP) 2016 which was published by the DoE for public comment in October 2016. IRP 2016 has been criticised by stakeholders for a number of reasons, including the fact that the modelling put apparently arbitrary caps on the proportion of generation capacity which can be made up of different types of renewables, without a clear rationale for these limits (EIUG, 2017; SAREC, 2017). The limits are set at a lower level than the proportion of generation capacity made up of renewables in many countries already (SAREC, 2017). If these artificial limits are removed, the CSIR has shown that the least cost energy mix for the country by 2050 involves most electricity (over 80% of electricity generated) coming from renewables, with a smaller amount coming from coal and gas (CSIR, 2017). Figure 12 illustrates the difference between the IRP 2016 and CSIR scenarios. The mix arrived at by the CSIR would result in a saving of R70 billion per year compared to the IRP 2016 base case, as well as halving CO<sub>2</sub> emissions, using a fraction of the water and raising employment.

**Figure 12: Comparison of IRP 2016 and CSIR re-optimised scenarios**

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39 IT Web, 16 January 2017. 'Eskom 'blatantly distorted' renewable energy costs. Available here.



Source: CSIR (2017)

It is unclear why the IRP2016 process includes limitations on the proportion of renewables in the energy mix which have such profound and costly implications for the outcome of the modelling. Indeed, the earlier draft IRP 2013, which was never adopted suggested that the renewable bid programme should continue, with additional annual rounds of 1000MW PV capacity, 1000MW wind capacity and 200MW CSP capacity. Both the DoE and Eskom have argued that there are grid capacity constraints which limit the amount of renewable energy which can be connected to the grid. This may be worsened by the fact that renewable generation tends to take place in isolated areas with limited connection points (EIUG, 2017). However, Eskom has received donor assistance towards helping it to integrate renewables into the grid and was recently awarded a loan of around R2.57 billion by the BRICS New Development Bank to build transmission lines to connect 500 MW of renewable energy from Independent Power Producers to the national grid.<sup>40</sup> The loan has since been put on hold due to the delay in signing the new IPP contracts.<sup>41</sup> In addition, as noted above, NERSA has confirmed that use-of-system charges incurred by Eskom in relation to PPAs with IPPs will be allowed as a full pass-through cost. It seems therefore, that solutions exist to these problems which Eskom is not taking advantage of.

System stability is also a concern with such a high reliance on renewables, but stakeholders point out that South Africa still has significant room to expand its renewables capacity before reaching the point where instability could become a problem (EIUG, 2017). Consequently, it will be some time before any kind of technical limit is reached, and many other countries are currently grappling with these issues and are further along the path towards a majority renewable grid. As illustrated by the CSIR’s modelling, gas turbines can provide a relatively cheap and flexible solution to the issue of grid stability as they are inexpensive to build and can be switched on and off at short notice in order to act as a balancing resource to renewables generation (SAREC, 2017).

40 IoL, 27 April 2016. ‘Eskom secures loan to connect IPPs to grid’. Available here.

41 Business Day, 17 August 2017. ‘Eskom’s Brics loan put on ice until 2018’. Available here.

In fact, notwithstanding the fact that they are already cheaper than new coal-fired generation plants, the competitiveness of wind and solar PV, is likely to continue to improve, owing to the fact that the costs of the technologies are derived from manufacturing processes that are being continuously improved as production is upscaled. By contrast, traditional fossil-fuel plants rely on finite fossil resources, where it becomes increasingly expensive as more primary energy is consumed.<sup>42</sup> This highlights the importance of opening the industry to new business models and to entry by new and innovative rivals in order to drive increased productivity and efficiency. Dependence on an entrenched incumbent is much less likely to lead to these dynamic efficiency and welfare gains.

In addition, given low rates of economic growth, increasing electricity prices and the growth of energy efficiency measures, it is difficult to predict how demand for electricity will grow in future and several commentators believe that the IRP 2016 significantly over-estimates likely growth rates (EIUG, 2017). In these circumstances, renewables are arguably a more attractive option than building very large power plants as they are smaller and can be built more quickly in response to increases in demand (EIUG, 2017). In addition, IPPs are able to be more nimble and flexible than a large SOC and are therefore better suited to exploit these opportunities. The regulatory and policy environment should be geared to lowering barriers to entry and participation by IPPs, rather than raising them.

Regulation is meant to deal with the market power in the generation level of the market through the regulation of prices (Newbery, 2001). However, there are a number of other ways that a monopoly in the generation market can affect competition. For example, Eskom controls an essential facility (the transmission network) that other generators cannot do without and has also been designated as the primary purchaser of electricity. As noted above, this gives it the power to determine the number of competitors that it has and the extent of their growth through its purchase decisions. The refusals to sign or delays in signing the BW4 and 5 REIPP contracts may amount to denial of access to this essential facility. Through the exercise of its market power, Eskom can attempt to reverse the gains made by the REIPP programme. The seemingly irrational assumptions made in the IRP 2016 also suggests that policy is still being made in order to protect and advantage Eskom at the expense of potential entrants and competition. Allowing Eskom to be the gatekeeper to new entry is having a clear negative impact on outcomes.

It is important to note here, that in addition to frustrating the goals of increasing competition in itself, the vested interests working to shelter Eskom from competition in generation are also in this instance working against another key policy objective of moving away from coal fired generation towards cleaner alternatives that will help South Africa to meet its climate change commitments (Montmasson-Clair, 2017). Thus, the lack of reform of the electricity sector has broader implications beyond simply preventing the achievement of an efficient, low cost and competitive market for power consumers.

### Transnet pipelines

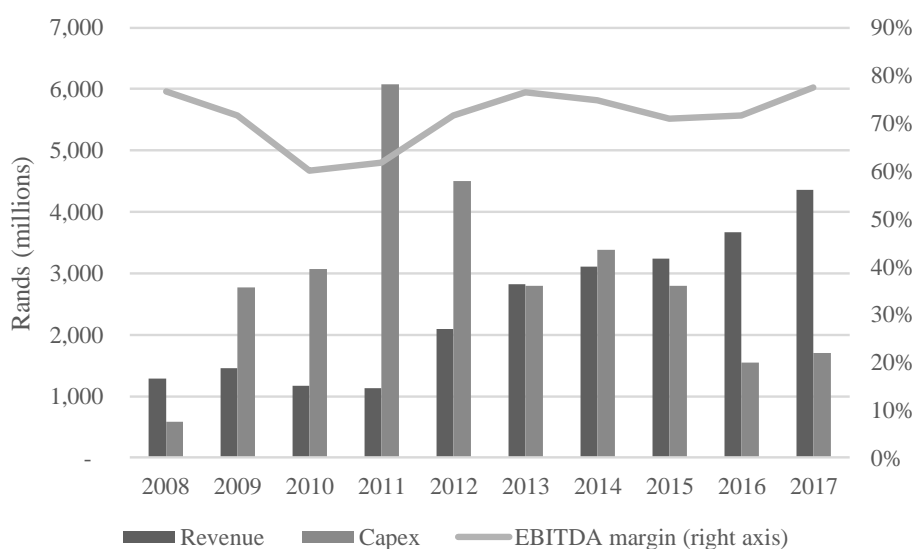
Transnet Pipelines is a business division within Transnet, established in 1965 when pipeline capacity was required to transport liquid fuel from the coast to the inland market. Today, Transnet pipelines owns, operates, manages and maintains a network of 3800km of high-

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<sup>42</sup> Engineering News, 22 August 2016. 'Wind, solar can supply bulk of South Africa's power at least cost, CSIR model shows'. Available here.

pressure petroleum and gas pipelines traversing five provinces. It has performed well financially over the past decade, maintaining an EBITDA margin of between 60% and 80% and substantially growing revenues (Figure 13). Its capital expenditures were extremely high in the period from 2009 to 2012, amounting to R16.4 billion, or 2.8 times revenue over that period. This is due to the construction of the New Multi-Product Pipeline (NMPP) between Durban and Gauteng.

**Figure 13: Transnet Pipelines' financial performance**



Source: Transnet Annual reports

As discussed at length by the Competition Tribunal in the Sasol/Engen merger decision<sup>43</sup>, the geography of South Africa is important in determining the competitive dynamics in the liquid fuel sector. Crude oil and processed fuel is brought into the country at the coast and either used in refineries there (there are two in Durban, one in Cape Town and one in Mossel Bay) or sold directly to customers in coastal regions. A large proportion of the population (accounting for 60% of demand) is situated inland, and these customers are served by two inland refineries: Natref in Sasolburg which is owned by Sasol Oil (64%) and Total SA (36%) and Sasol (Synfuels) in Secunda. Natref requires supplies of crude oil, which are transported inland from the coast to Sasolburg through a dedicated crude oil pipeline owned by Transnet Pipelines. Further supplies of refined product are also transported to Johannesburg from the coastal refineries as the inland refineries do not produce enough product to meet demand. Refined fuel is transported from Durban to Gauteng via the Durban to Johannesburg Pipeline (DJP) owned by Transnet Pipelines. Volumes of refined products have been constrained since 2006 as the DJP has been unable to meet demand, and road and rail have been used to top up the volumes transported to the inland region (Naidoo, 2011).

In April 2007, NERSA granted Petroline a license to build a petroleum pipeline from Maputo to Gauteng, which would provide further refined product volumes to the inland market. Transnet meanwhile had started planning to build a replacement for the DJP as early as 2003 (Transnet, 2010), but was only granted a license from NERSA in September 2007 to build the

<sup>43</sup> Tribunal case number 101/LM/Dec04.

New Multi-Product Pipeline (NMPP) from Durban to Gauteng.<sup>44</sup> Following the fuel crisis experienced in December 2005, government requested that Transnet increase the size of the NMPP to a 24-inch diameter pipeline rather than then planned 16-inch pipeline. The granting of the NMPP license did not deter Petroline initially, as it believed it would be able to transport product at a lower cost than Transnet and be competitive in the inland market (Petroline, 2011). Two subsequent policy and regulatory decisions changed this.

In 2011 the Commission received a complaint from Petroline which alleged that policy decisions taken by National Treasury and a tariff decision taken by the National Energy Regulator (NERSA) of South Africa had unfairly advantaged Transnet and forced Petroline's exit from the market (Loopoo and van Wyk, 2013). Petroline alleged that its project was rendered unviable when Transnet received a subsidy from the National Treasury in the form of a new 'security of supply' levy of 7.5c/l on fuel prices and when NERSA took the decision to cross-subsidise the cost of the NMPP by pooling the NMPP tariff with the tariffs for existing pipelines. (Loopoo and van Wyk, 2013). Petroline calculated that the fuel levy amounted to a subsidy of 30% for the NMPP and the cross-subsidy from other pipeline tariffs to a 40% subsidy (Petroline, 2011). The National Treasury confirmed at the time that the levy was to be exclusively for the benefit of Transnet and not its competitors, even where they could demonstrate that their projects also met a security of supply requirement, and suggested that the levy should be seen as a "shareholder recapitalising" a state-owned enterprise.<sup>45</sup> Petroline argued in its submission to NERSA on the 2011 tariff determination: "*The regulated cross subsidies presented render it impossible to compete with the state enterprise*".

The decision by NERSA to pool tariffs across pipelines in order to cross-subsidise the NMPP is odd, given that the investment is not in incremental volumes provided through an existing pipeline but to construct an entirely new pipeline. This approach tends to deter entry by competitors as it forces them to compete with the lower, blended price rather than the true cost of constructing the new pipeline. NERSA had itself recognised this in a previous decision where it had decided not to permit cross subsidisation of the NMPP: "*The cross subsidies proposed by the applicant also need to be addressed. The applicant wishes to use tariffs from its entire network to cross subsidise the NMPP and associated storage facilities, after they become used and usable. Such cross subsidies have two negative impacts. The first negative impact is upon competing pipelines. Competing pipelines that do not have the benefit of cross subsidies from other pipelines will be unfairly disadvantaged*"<sup>46</sup>. It is unclear why NERSA changed its approach to the pooling question.

The Commission did not have jurisdiction to consider Petroline's complaint as it is not empowered to review decisions of National Treasury or NERSA and following this, Petroline's pipeline was put on hold and has never been constructed. Meanwhile, the construction of the NMPP has been significantly delayed and over cost, and large price increases have been passed on to customers and subsequently consumers in the petrol price. Initially estimated to cost R11 billion, the construction of the NMPP has escalated continuously. In 2017, Transnet estimated the final cost of the NMPP to be R31.9 billion. Although it came into operation in 2012, by 2016, the NMPP was not operating on a multi-product basis as the storage facilities

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44 See Transnet website.

45 Engineering news, 18 February 2010. Available here.

46 See NERSA's decision on the awarding of a license to Transnet for the NMPP, cited by Petroline (2011). NERSA appears to have stated its support for a standalone tariff for the NMPP on a number of occasions as referenced in Petroline's (2010) comments on Transnet's tariff application.

at either end of the trunk line were still under construction, meaning that it could only transport diesel (NERSA, 2016b). NERSA also found that Transnet's operating efficiency had been deteriorating from 2008/09 onwards (NERSA, 2016b). In its 2016/17 tariff decision, NERSA stated that *"The project costs if viewed over time show significant volatility with both escalations and reductions in forecast costs. Forecast commercial operation dates have also shown significant volatility... Both of these elements have become more erratic recently when, as the project (hopefully) draws to a close, the opposite would be expected."*

These costs and delays have had a massive impact on tariffs, in spite of the subsidies provided. In 2011 and 2012, Transnet applied for increases of 69.1% and 83.3% in its allowable revenue for the 2011/12 and 2012/13 years, but after considering the application, NERSA only granted increases of 59.9% and 31.6% respectively (NERSA, 2011 and 2012). In addition, the fuel levy imposes a cost on all road users throughout South Africa, and not just in the inland region.

This raises questions around whether economic regulation is sufficiently geared towards incentivising entry by competing pipeline operators. While pipelines may seem like a textbook example of a natural monopoly as the average price of pipeline capacity declines with the diameter of the pipeline, the fact that fuel sources and markets change over time mean that incremental capacity is often required, and it is this incremental capacity which provides for the possibility of competition (Makholm, 2013). In fact, where investments in incremental capacity to an existing pipeline or construction of a whole new pipeline is required, this will often result in a higher average cost per unit of capacity than the initial pipeline, which makes it economic for a rival pipeline to enter (Makhold, 2013). This was explicitly noted by NERSA in its various determinations as discussed above. Therefore, the Petroline case represents a real missed opportunity for introducing competition to Transnet in fuel transportation. Once again, policy was focussed on a broader objective (fuel security) and gave insufficient attention to encouraging rivalry and diversifying the sector. This ultimately led to higher prices and reduced choice for customers.

This also impacted on competition in the downstream market for fuel in the inland region. As noted by Paelo et al (2014), the proposed Petroline pipeline would have offered fuel wholesalers in the inland region an alternative source of product, reducing their reliance on the oil majors (from whom they are currently forced to source) and giving them greater negotiating power and ability to compete effectively. It could have provided a new and competitive source of fuel to the inland region. Here again, policy and regulatory decisions benefiting the SOC likely resulted in a significant cost to the economy.

#### **4 Conclusions**

The case studies presented in this paper clearly illustrate that the protection of state-owned monopolies in South Africa has resulted in poor competitive outcomes in markets which are both critical to consumers and provide key inputs into the productive sectors of the economy. A lack of rivalry is likely to result in high prices, poor service and low levels of innovation in telecommunications and energy, which raises costs and negatively impacts South Africa's competitiveness across the board. At the same time, SOCs have had counter-productive incentives to abuse their control of key assets to make life difficult for rivals and maintain their dominant position in the market.



Internationally, these problems have been recognised and dealt with explicitly through pro-competitive reforms, competitive neutrality frameworks and pro-active economic regulation. In South Africa, however, economic regulation has often been ineffective in disciplining the large incumbents and in promoting competition, and it has been left to the competition authorities to sanction instances of anti-competitive conduct in key sectors. However, ex-post interventions are necessarily limited in their ability to stimulate greater rivalry in the market in a forward-looking manner while the competition authorities cannot over-ride government policy.

South Africa's SOCs have also been ineffective in achieving their broader objectives of universal access and affordability of services and have not been held accountable for these failures. The costs of poor monitoring of SOCs' conduct have included the capturing of the policy agenda by vested interests, and the protection of SOCs at the expense of greater rivalry, choice and innovation. In addition, the ability to meet other important policy goals has been compromised, such as in the case of the development of renewable energy, where the protection of entrenched interests has put at risk South Africa's ability to reduce the carbon intensity of the economy and meet its international commitments.

This begs the question of why South Africa's SOCs exist at all if they continue to deliver costly, inefficient services, as this defies the goal of expanding access which, in many cases, was the rationale for their creation and continued existence. Nowhere is this more evident than in the rapidly escalating cost of electricity. No matter how many electricity connections Eskom (funded by government) provides, this will not assist in expanding access if the service is too expensive for consumers to afford. This is why internationally, countries have moved on from supporting monopoly service providers to using more innovative means of expanding access which harness competitive forces to lower the cost of services, such as competitive tender processes and demand-side subsidies.

By contrast, in the limited instances in which rivalry to SOCs has been introduced in South Africa (in most cases in spite of, rather than because of, pro-active policy or regulatory action), it has generally delivered positive outcomes in terms of lower prices, greater innovation, better service and delivery of broader policy goals. In telecommunications, pro-competitive developments such as the Altech judgement, the Competition Tribunal's sanctions against Telkom, and the introduction of increased competition on long distance and international links, has significantly reduced the cost of fixed broadband in South Africa. Further gains are possible if regulation follows international best-practice and is focussed on regulating for competition rather than protecting the incumbent. In electricity generation, the great success of the REIPP programme illustrates how new and innovative technologies can dramatically reduce costs if given space and encouragement to grow.

Thus, both international best practice and South Africa's own experience provides an argument for introducing greater competition to SOCs, removing the advantages and protection which they enjoy, and finding better (more competitive and lower cost) ways of incentivising the delivery of public service obligations and widening access. In large part, best-practice models for delivering these services competitively already exist, but they need to be tailored to the South African institutional, political and economic context. Some of the examples which we have discussed such as the REIPP programme and the Western Cape broadband project illustrate that they can be used successfully in South Africa.

The competition authorities can play a critical role in advocating for pro-competitive policy and regulatory interventions. Where trade-offs exist between competition objectives and broader

policy goals, the competition authorities may be better able to recognise, analyse and weigh these. In both telecoms and energy, important decisions are currently being made around how the sectors should be structured in future and how cost-effective services can best be delivered in the coming years. In both sectors, the case needs to be made for a strong role for competition in delivering better outcomes. In the telecommunications sphere, these decisions revolve around the best means of rolling out high speed, affordable broadband to all South Africans. Rather than entrenching or creating market power, as proposed in some policy documents (for example through again designating Telkom as the main agency for rollout and creating a new spectrum monopoly in mobile), advocacy should promote the power of competitive markets in lowering costs and achieving access goals. In energy, critical investment decisions are being made which will shape both the energy mix and structure of the sector for many years to come. Again, there is need for a strong case to be made for the opening up of the sector to greater competition, rather than continuing to support the dominance of the state-owned incumbent. This paper has shown that there is clear evidence to support these positions.

#### A competition policy for SOCs

This paper has demonstrated the high cost of poor policies and the failure to discipline the market power of SOCs. We have therefore motivated for a competition policy explicitly targeting SOCs. The aim of such an approach would be to encourage explicit consideration of the competition effects of SOCs, their conduct and regulation. The stimulation of new entry and competition should be seen as a central objective of SOCs, since they are in a unique position with the ability to lower barriers to entry and encourage new entry, through providing entrants with access to infrastructure on reasonable terms. SOCs need to be seen as facilitators of competition, rather than as monopoly providers of services.

Our proposed policies aimed at SOCs are detailed below, along with ideas for how they could be implemented:

- 1) **Lowering barriers to entry as an explicit objective.** The facilitation of competition should be an explicit objective of all SOCs, particularly when it comes to the provision of infrastructure to downstream firms. Measurements should include how SOCs have contributed to opening up the market to new players and their impact on choice, innovation and price. This can be implemented by amending the enabling statutes of SOCs to include penalties on management for any competition law or regulatory infringements and for failing to allow access to facilities on fair and reasonable terms.
- 2) **Open access requirements for all SOCs.** All SOCs should be required to provide access to their infrastructure on request, on reasonable and non-discriminatory terms and at competitive prices. Failure to do so should result in penalties for the company, management and the board.
- 3) **Structural separation for vertically integrated SOCs.** Where possible, SOCs should not operate at more than one level of the value chain. Where this is the case, structural separation should be implemented in order to ensure that downstream rivals can access inputs on fair and non-discriminatory terms.
- 4) **Transparency in regulating for competition and not to protect vested interests.** Regulatory failures in the past suggest that South Africa's economic regulators need to be more focussed on regulating for competition and resist pressure to protect incumbent SOCs at the expense of rivalry and dynamism. Measures to protect and increase the independence of economic regulators may assist in this regard (see Hawthorne et al, 2014).

- 5) **Greater cooperation between competition authorities, policy makers and regulators.** Closer cooperation between the entities involved in making policy and regulation for SOCs and the competition authorities will be required in order to implement such a policy. A formal mechanism should be created for the relevant departments and economic regulators to submit any new or altered legislation, draft policy documents and regulations pertaining to SOCs or the markets in which they operate to the Competition Commission for comment. There should also be structures for regular engagement between the Commission and the relevant departments.
- 6) **A clear rationale and measurable objectives.** It should be mandatory for SOCs to have a clearly defined rationale which sets out the objectives they are intended to address, and measurable criteria for achieving them. SOCs should be encouraged to focus narrowly on these specific objectives and prevented from expanding into markets where there is no clear rationale for government intervention.
- 7) **Monitoring and accountability.** There should be mechanisms for monitoring progress towards the SOCs objectives and for enforcing the accountability of boards and managers who are required to implement these objectives. Attention should be given to aligning the incentives of boards and managers with competition goals and public policies through employment contracts and performance monitoring procedures, and to guard against incentivising short-term profit maximisation which has spurred abuse of their market power. Any finding of anti-competitive conduct by an SOC should result in sanctions for management and the board.

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