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SOEs and competition: reflections on South Africa's experiences in telecommunications and energy[1]

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Abstract

South Africa has over 700 SOEs[4], from constitutional organisations like the SA Human Rights Commission, to government entities (museums, research institutions, regulators) to commercially run companies (also called Schedule 2 entities or major public entities). Those in the latter category (of which there are twenty) are particularly important from a competition perspective, as these entities provide services on a commercial basis, operating in markets where they compete with other firms and influence competitive dynamics and outcomes. Although they often have an important public interest rationale, these mandates and the manner in which they are executed can create conflicts with competition objectives. Theory and practical experience, both internationally and in South Africa, illustrate the competitive distortions and perverse outcomes (often leading to negative impacts on consumers) which can arise when SOEs are poorly managed and regulated. By contrast, where policy and regulation provides incentives for SOEs to compete fairly, this can lead to much more positive outcomes for the economy and for consumers.

In this paper, we focus on the energy and telecommunications sectors to reflect on South Africa's record of managing SOEs and the impact on competition outcomes. The evidence suggests that SOEs have been guilty of excluding rivals and undermining competition even where they play an important role in delivering on social objectives (although in some cases their achievement of these goals is also questionable). Regulatory and political capture have also led to the distortion of competitive markets, and the undermining of investment incentives for other market participants. Through an examination of international literature and experience, as well as the experience of South Africa, we attempt to provide a best-practice framework for dealing with SOEs, which will enable them to achieve important social objectives without simultaneously distorting competition.

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[4] Presidential Review Committee (2013)

1 Introduction

South Africa has over 700 SOEs[5], from constitutional organisations like the SA Human Rights Commission, to government entities (museums, research institutions, regulators) to commercially run companies (also called Schedule 2 entities or major public entities). Those in the latter category (of which there are twenty) are particularly important from a competition perspective, as these entities provide services on a commercial basis, operating in markets where they compete with other firms and influence competitive dynamics and outcomes.

SOEs are usually created in response to market failure or to carry out a public interest mandate. For example, SOEs 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, SOEs can simultaneously have a significant distortionary impact on competition in the sectors in which they are active. SOEs 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, SOEs 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 conduct can undermine any public interest benefits derived from the existence of SOEs. For this reason, many countries have grappled with the question of how best to regulate SOEs 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.

South Africa's SOEs and policy concerning SOEs have performed poorly from a competition perspective, as illustrated by the history of the telecommunications and energy sectors. In telecommunications, government policy has explicitly and implicitly advantaged the state-owned incumbent, 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 incumbent (and legislated single buyer of electricity) refuses to contract further generation capacity. In both sectors, government policy shows signs of further entrenching the dominance of state-owned players, rather than opening up the sectors to rivalry and dynamism. In this context, it is pertinent to explore the experience and best practice with regulating SOEs for competition.

The paper proceeds as follows. Section 2 presents a brief review of South Africa's SOEs in telecoms and energy, their roles, mandates and performance. Section 3 then presents a review of literature and international experience in terms of the impact of SOEs on competition and different approaches to minimising competitive distortions caused by SOEs. Section 4 looks at the experience in telecommunications and energy in particular, focussing on the impact of South African SOEs on competition. Section 6 concludes and provides recommendations.

[5] Presidential Review Committee (2013)

2 Background to South Africa's SOEs

Prior to 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. 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. The performance of the SOEs as well as the role of regulators in providing oversight has been reviewed over the years (see Mondliwa and Roberts (2013) and FRIDGE (2011) for a review of these studies). Two important points highlighted by these reviews is the poor record in terms of allowing access to key infrastructure by SOEs and the lack of transparency in the ways that SOEs undertake infrastructure investments (Mondliwa and Roberts, 2013).

The reviews of the performance and economic regulation of SOEs have generally focused on ex-ante regulation. However, there is also a need to conduct similar assessments to understand the impact of SOEs on competitive outcomes in the economy. In South Africa, these competitive outcomes have been addressed in a number of cases by ex-post regulators. Competitive outcomes in markets matter, as it has been shown that competitive rivalry delivers better results for consumers and the economy overall (Roberts, 2016). Though SOEs operate in a space where competition is not always possible, careful consideration needs to be given to the demarcation of those activities that are subject to natural monopolies, and those where competition can be fostered to deliver better outcomes for consumers and the economy.

2.1 Rationale for the existence of SOEs

Government intervention has three main functions: allocative, distributive and stabilisation functions (Black et al, 2003). The allocative function relates to actions to correct the allocative distortions arising from incomplete and non-competitive markets. The distributive function arises from the distributional failures of competitive markets described above. Finally, the stabilisation function is concerned with macroeconomic objectives such as ensuring economic growth, full employment, price stability and a sound balance of payments.

Market failures provide a *prima facie* case for government intervention (Black et al, 2003). While in theory, markets can deliver optimally efficient outcomes, in reality this is not always the case, due to a range of market failures including a lack of information, lags in adjustment, incomplete markets and non-competitive markets (Black et al 2003). A natural monopoly exists in industries where economies of scale are so high that only one firm can cost-effectively serve the market and it doesn't make economic sense to duplicate core infrastructure (Black et al, 2003; Viscusi et al, 2000). Examples of natural monopoly sectors include fixed-line telecommunications, electricity transmission and rail infrastructure. In these examples there is a clear rationale for the delivery of services through an SOE, since government can determine its mandate and, through regulation, can ensure that the SOE does not abuse its monopoly power.

SOEs are also established in instances where capital markets will undervalue a project from a social perspective which may mean that socially efficient projects do not obtain financing. This is commonly understood as accounting for externalities. An externality arises when the action of a firm or individual has a cost or benefit for others which it fails to take into account in its production or consumption decision (Black et al, 2003). Similarly, absent intellectual property rights, the market will typically under-provide research and development due to the fact that its social benefit is higher than the private

benefit which firms can derive from undertaking it. In such situations, governments may intervene (for example by creating SOEs) to ensure the socially optimal outcome is achieved.

Government may also intervene in markets to try to meet social objectives. First, there might be distributional or equity objectives that governments want to meet which differ from market-determined outcomes. For example, the private sector alone may not serve remote regions or poorer customers if it is not profitable, but from a social perspective it may be desirable to do so. In this situation, government intervention may be required to ensure that products and services are delivered to the required consumers at the right price.

If a rationale for some form of intervention exists, Shirley (1999) notes that the economic literature is generally neutral on the choice between state ownership versus regulation of privately owned firms, but notes that the case for ownership is stronger where there are large projects with specific assets where the state may be able to mobilize more capital at lower cost and spread the risk over all citizens or where information asymmetries make effective regulation of private firms particularly difficult.

2.2 South Africa's SOEs

The term state-owned enterprise (SOE) encompasses a wide range of institutions. In South Africa, there are over 700 SOEs including constitutional organisations like the SA Human Rights Commission, government entities (museums, research institutions, regulators), and commercially run companies (also called Schedule 2 entities or major public entities) (PRC, 2013). The last category of institutions have a significant impact on competitive outcomes in the markets in which they operate.

Many of South Africa's SOEs were established in the first half of the 20th century in support of the development of the infrastructure required to build a resource-based economy (Mokwena, 2012). State ownership of the entities was necessitated by the huge capital requirements for these infrastructure investments. In 1950 Sasol was established in order to improve national fuel security and from the 1960s onwards, the state also became involved in defence-related industries, creating Armscor and later Denel. Until the 1980s, these entities were funded by the state as instruments of industrial policy and their products and services were often provided on a subsidised basis. Around this time a global disenchantment with state intervention began to prevail and a wave of privatisations followed internationally. In South Africa, from the mid-80s onwards government tried to foster the private sector and privatised a number of key state industries including Sasol (PRC main report, 2013).

For South Africa's first democratically elected government in 1994, the question of whether to privatise some of the entities or assets was the subject of much debate. In 1999 the government announced that priority would be given to the restructuring of the four largest SOEs – Telkom, Eskom, Transnet and Denel (Fourie, 2001). Some assets were sold off, for example a 30% stake in Telkom was sold to private investors. There has, however, been little change in the status of SOEs since, with the majority remaining 100% state-owned but, in theory at least, corporatized. Some attempts have been made to bring in equity partners (for example at SAA and ACSA); however, these partnerships have not typically proved sustainable, with the private investor exiting quite soon (sometimes at a substantial profit) after the initial investment.

For the purposes of this paper, we have selected SOEs in the telecoms and energy sectors to study how SOEs impact on competitive outcomes. 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). There are a total of 5 SOEs in the telecommunications and energy

sectors, 3 of which fall under the department of enterprises and remaining 2 in the department of energy and communications (Table 1).

Table 1: Description of South Africa's SOEs

SOE	Area of operation	Responsible Department	Rationale	Government ownership
Broadband Infraco	Provision of telecommunications infrastructure	Telecommunications & postal services	Improve access to broadband	DPE 74%, IDC 26%
CEF (including PetroSA)	Acquisition, generation, manufacture, marketing or distribution of any form of energy and research connected therewith	Energy	Energy security	Wholly-owned
Eskom	Electricity generation and distribution	Public Enterprises	Natural monopoly (transmission and distribution), universal service	Wholly-owned
Telkom	Telecommunications	Telecommunications & postal services	Natural monopoly (last mile), universal service	Minority stake
Transnet	Gas and petroleum pipelines	Public Enterprises	Large investments required	Wholly-owned

Source: National Treasury, 2013; SOE websites and Annual Reports.

Given the importance of energy and telecommunications to economic development, the dispersion of these SOEs to various government departments means that there may be some challenges in terms of coordinating the behaviour of the firms to meet the country's development goals. The recent confusion between Eskom and the government regarding the contracting of new renewable independent power producers is an example of this (this is explored further in section 4.2).

The rationales for state ownership in the telecoms and energy sectors are either natural monopoly or social objectives such as broadband access, energy security or large investment requirements. However, it is important to note that even those for which the rationale is a natural monopoly, not all the SOE's activities can be characterised as a natural monopoly. For example, Eskom is engaged in power generation, transmission and distribution, however, only the electricity transmission and distribution is a natural monopoly. In a number of areas, the SOEs have been allowed to cross subsidise earnings from non-monopoly activities in order to support the universal services obligations that are placed on them.

In some cases, SOEs are not delivering effectively on the mandate for which they were created. Broadband Infraco (BBI) claims to exist in order to improve access to and lower the cost of broadband[6], presumably through providing an alternative long-distance infrastructure network to the other state-owned provider, Telkom. Where effective private competitors do not exist, competition between state-owned providers can be one means of introducing competition to an industry in order to provide customers with the benefits of rivalry such as lower prices, greater innovation and better service levels. However, as will be seen below, BBI has been plagued by ineffectiveness and financial mismanagement since its inception, and as such has not provided effective competition to Telkom.

[6] See Broadband Infraco website.

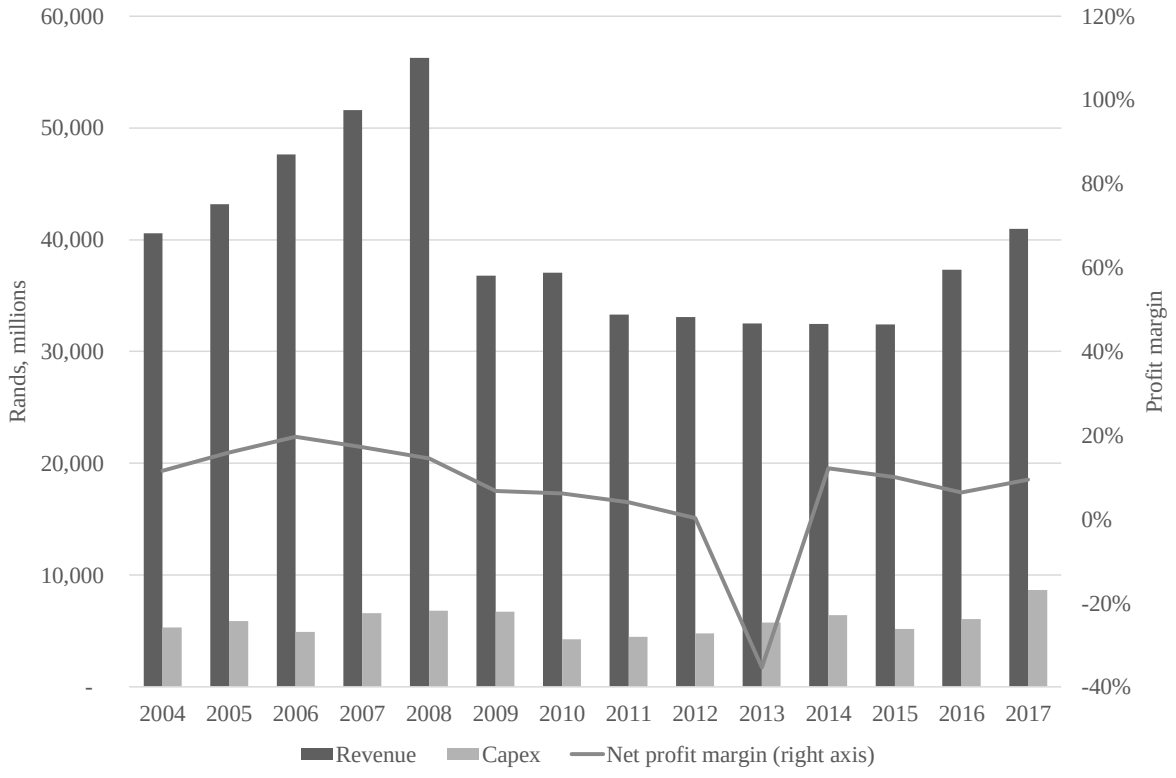
The performance of the SOEs is also closely related to the way that they are regulated. Reviews of economic regulation of South African SOEs in infrastructure have found that regulators are unable to protect consumers against poorly executed SOE projects and cost overrun; regulators are not effective in preventing monopoly abuse; and, regulators are unable to review new market entry and capital projects effectively (Steyn, 2011). Though ex-post regulation has been somewhat effective in terms of allowing access at least to 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 are delayed. In the rest of this section we provide background information for selected telecoms and energy SOEs.

2.3 SOEs in Telecommunications

Telkom is the fixed line telecommunications incumbent in South Africa, providing 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's financial performance from 2004 to 2016 has been mixed. As illustrated in Capital expenditure averaged R5.8 billion per year over the period, or 15% of revenues, increasing slightly from 2013 onwards.

Figure *1*, revenue increased strongly from 2004 to 2008 before falling substantially in 2009, mainly due to the sale of Telkom's stake in mobile operator Vodacom, and declining slowly until 2015. In 2016, revenue increased. 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 6-12%. Capital expenditure averaged R5.8 billion per year over the period, or 15% of revenues, increasing slightly from 2013 onwards.

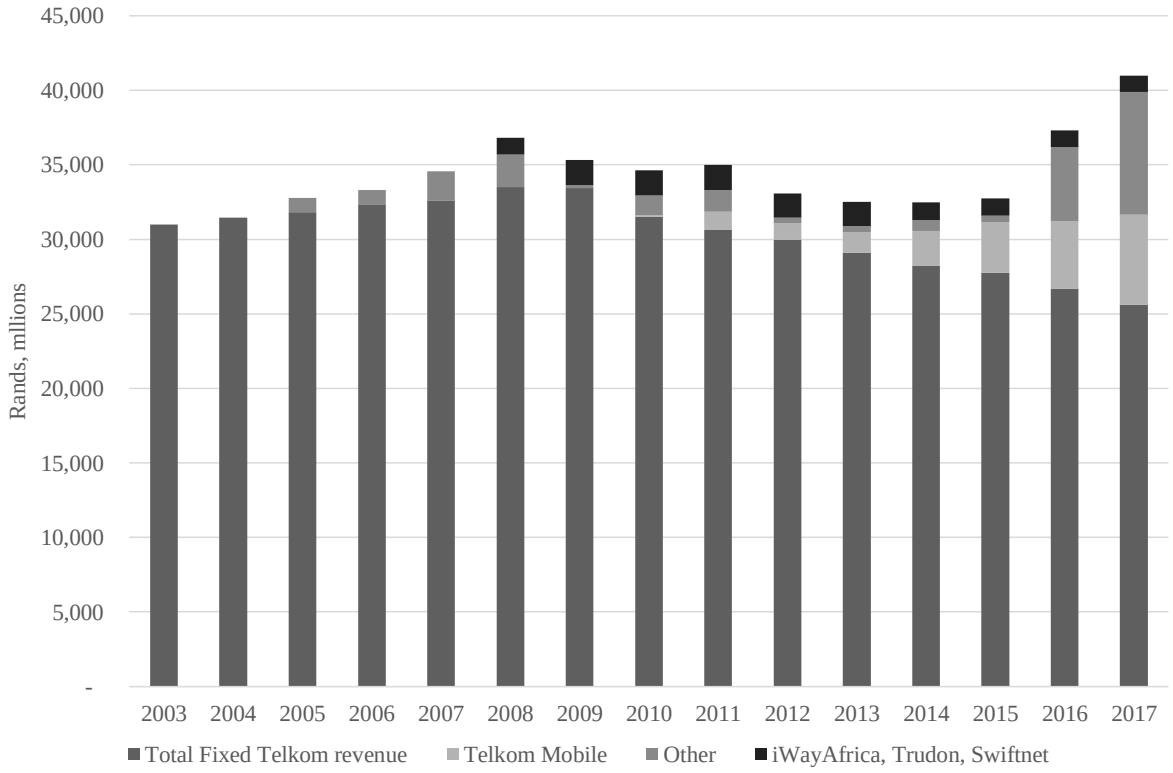
Figure 1: Telkom's financial performance, 2004 – 2016



Source: Telkom Annual Reports

Figure 2 illustrates the breakdown of Telkom's revenues per segment from 2003 to 2017. Fixed line revenue has remained the largest portion of revenue throughout the period. From 2010 to 2017 mobile revenue has grown substantially, from around R80 million to over R6 billion. This has compensated for falling fixed line revenue (which may be partly due to higher levels of competition in the fixed line market, as will be discussed further below). The large increase in "other" revenue in 2016 and 2017 is the result of the acquisition of Business Connexion (BCX) and led to a strong growth in total revenue in 2016 and 2017.

Figure 2: Breakdown of Telkom revenues, 2003 – 2017



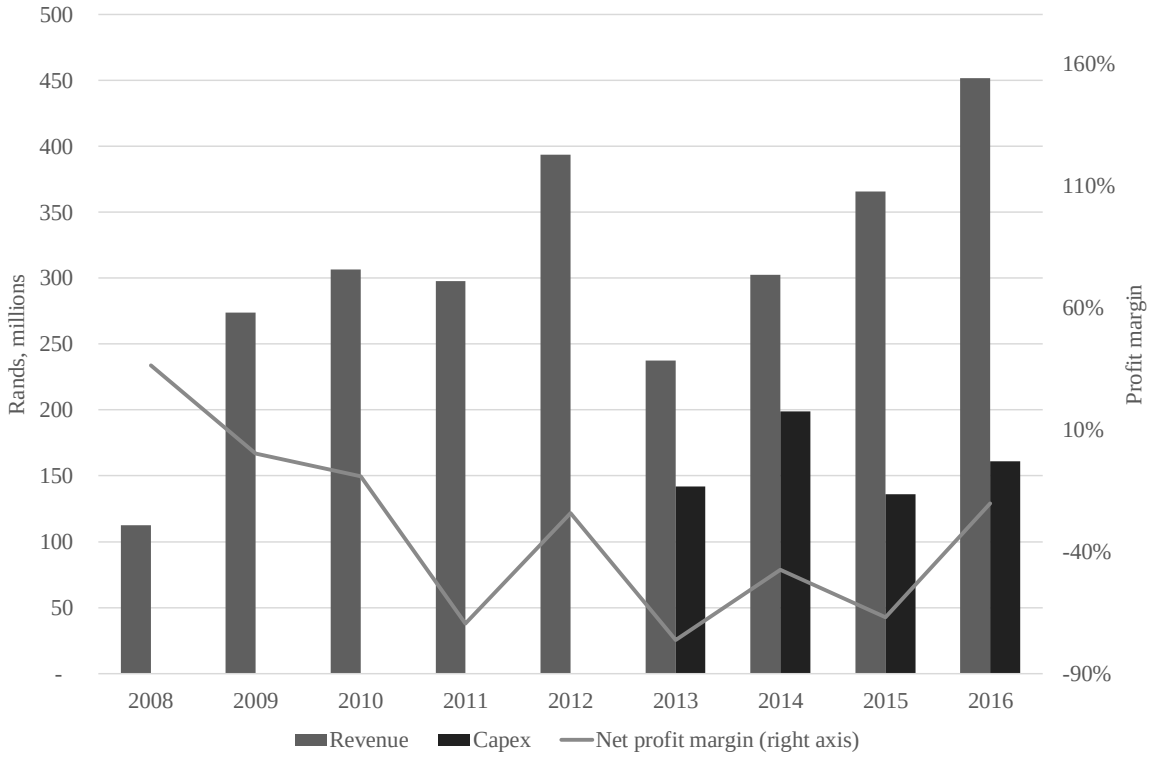
Source: Telkom Annual Reports and Results Booklets

Note: Vodacom revenues are excluded

By contrast, BBI's financial performance has been dismal ever since it was created (

Figure **3**). It made losses in every year from 2010 to 2016, several of which were substantial (70% in 2011, 76% in 2013 and 67% in 2015). Although its revenue has grown over time, this has not translated into a sustainable business model for BBI. In addition, BBI had accumulated R1.8 billion of shareholder loans from DPE and the IDC by 2016, on which no repayments have ever been made (BBI Annual Reports, 2008 – 2016). BBI's revenues in 2016 amounted to R542 million, compared to Telkom's R37 billion. 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.

Figure 3: BBI's financial performance, 2008 – 2016



Source: BBI Annual Reports
Note: BBI did not report capex spend prior to 2013

Telkom employed around 18,800 people in 2017, down from 32,358 in 2004. Employment fell steadily over the period. By contrast, BBI's staff complement has grown since its creation in 2007 from 13 to 175.

2.4 SOEs in Energy

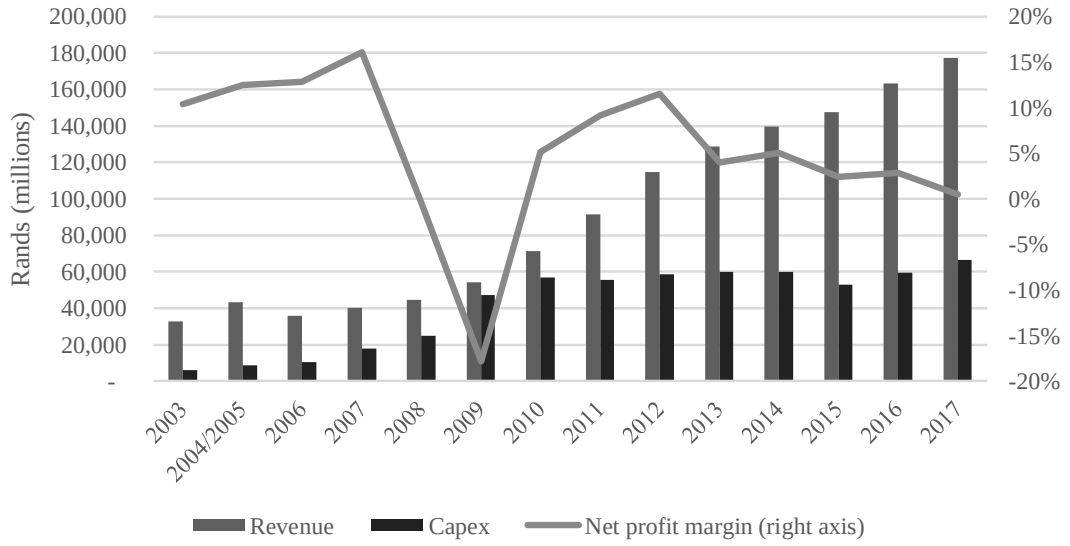
There are 3 main state-owned enterprises that are corporatized in the energy sector; Eskom as the electricity producer and distributer, the Central Energy Fund (CEF) as the custodian of PetroSA, the Petroleum Agency of South Africa (PASA), the Strategic Fuel Fund Association (SSF), the South African Gas Development Company (iGas) and the African Explorations Mining and Finance Corporation (AEMFC), and Transnet as provider of petroleum pipeline transport.

Eskom is the 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 4). 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 4) 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. In 2016, Eskom employed 47 978 people. this number has grown from 39 760 in 1994.

Figure 4: Eskom's financial performance



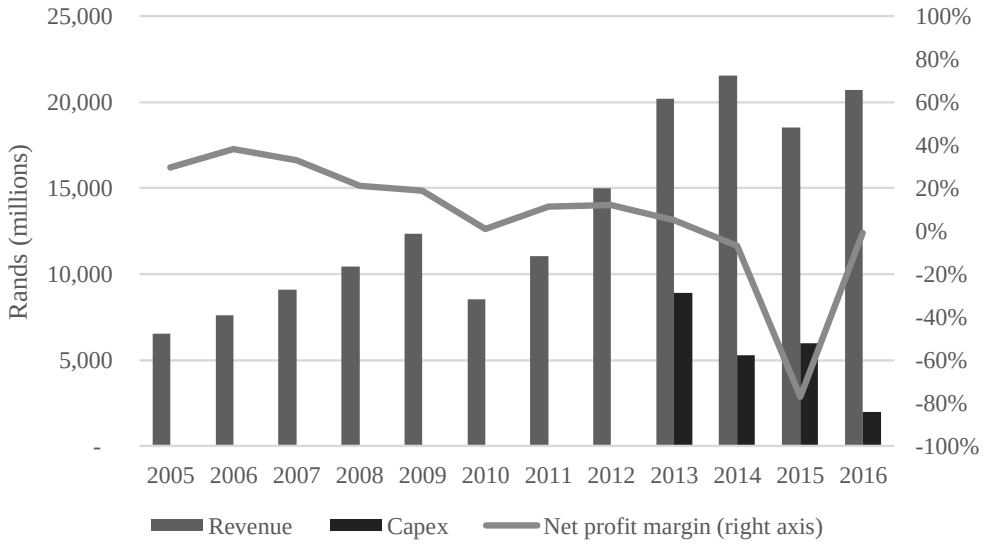
Source: Eskom Annual reports

Within CEF, PetroSA is involved in the exploration, production, refining and marketing of oil, gas and petrochemicals.[7] PASA, is involved with the promotion, licensing and regulating the exploration and production of the country's natural oil and gas resources. The SFF manages strategic crude oil infrastructure, strategic crude oil stocks, and provides oil pollution control services in Saldanha Bay. iGas is a shareholder in the Mozambique-to-South Africa gas pipeline involved in the development of gas and other gas infrastructure. AEMFC mines coal in Mpumalanga for supply to Eskom and is concluding feasibility studies on expanding its operations.

CEF's financial performance deteriorated from 2006 onwards, despite increasing revenues in most years (Figure 5). It profitability has declined over the period from around 30% in 2005 to close to zero or negative in recent years. In 2010 and 2015, CEF suffered large revenue falls and in 2014 and 2015 it made losses of 7% and 77% respectively. Capital expenditure was only reported for 2013 to 2016, but has varied considerably from year to year.

[7] CEF SOC LTD Integrated Annual report, 2015/16.

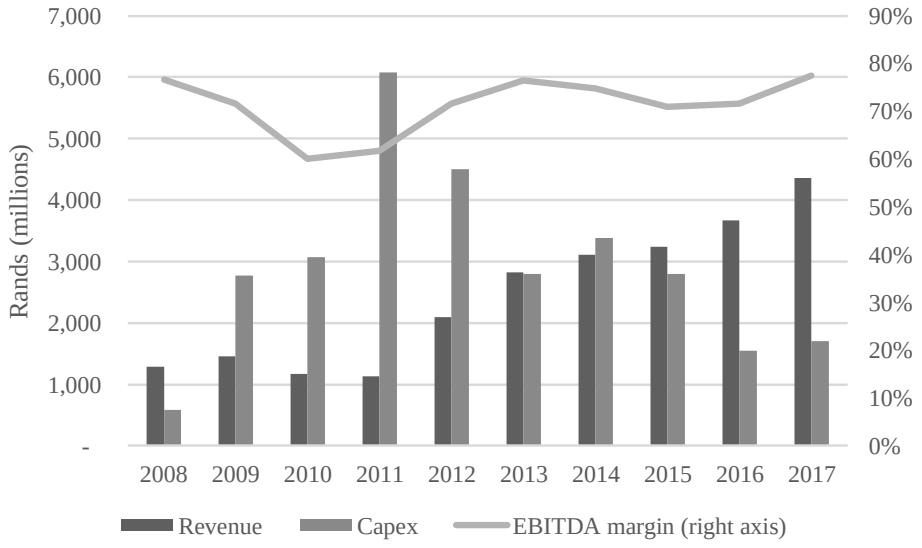
Figure 5: CEF's financial performance



Source: CEF Annual reports
Note: CEF did not report capex spend prior to 2013

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-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 6). 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. Transnet Pipelines employed 642 people in 2017.

Figure 6: Transnet Pipelines' financial performance



Source: Transnet Annual reports

2.5 Conclusion on the financial performance of South Africa's SOEs

In summary, the SOEs in telecommunications and energy have had a mixed financial performance. The largest SOEs - Telkom and Eskom – have been financially sustainable for the most part and relatively profitable at times. Telkom has not invested heavily over the past 12 years, whereas Eskom has invested significantly in new generation capacity from 2009 onwards. BBI's financial performance has been exceptionally poor and the rationale for its existence remains unclear as it seems unable to leverage the fixed line assets which it has into providing effective competition to Telkom, as will be discussed further below. CEF's financial performance has deteriorated significantly over the past 12 years, raising questions about its purpose and effectiveness. Finally, Transnet Pipelines has been extremely profitable over the period and, from 2009 onwards, has been investing heavily in new infrastructure. Significant concerns have been raised with this investment, however, around cost, build time and delays, as well as the impact of regulatory decisions around the new pipeline on investment by potential rivals. In the next section we reflect on international experience with SOEs and competition, before providing more detailed case studies of competitive outcomes in telecoms and energy in section 4.

3 SOEs and competition: theory and international best practice

SOEs 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.

3.1 SOEs and competitive neutrality

In a report for the OECD, Copobianco and Christiansen (2011) list the basic competitive advantages that SOEs 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 SOE 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 SOEs such as exemptions from costly regulatory regimes, advantageous public procurement policies or access to government information.
- Monopolies and incumbency advantages – government may grant SOEs exclusive rights over certain activities.
- Captive equity – this refers to the fact that control of an SOE 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 SOEs 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 SOEs.

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

The UK's Office of Fair Trading (OFT) (now the Competition and Markets Authority) refers to markets in which SOEs 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). This is important since it affects the efficiency of the market and firms' incentives to innovate.

There were five main "planks" of competitive neutrality reforms in Australia (Rennie and Lindsay, 2011). Transparency and accountability requirements were to bring SOEs 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 SOEs where possible or establishing "taxation equivalent regimes". Debt neutrality would ensure SOEs obtain financing at market rates and do not obtain preferential financing. Rate of return neutrality required SOEs 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.

The concept of competitive neutrality is particularly 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 SOEs 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.

In China, SOEs 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. SOEs 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 SOEs) 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).

However, others complain that China's SOEs are inefficient and industries have become over-concentrated and un-competitive as a result of the protection of SOEs. For example, Shiyang (2014) describes how, in the oil industry, this has led to three state-owned companies which were granted monopoly in wholesaling in order to ensure security of supply, expanding their monopoly power to other sectors 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 SOEs) 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).

SOE reform is underway in China, including trying to reduce the competitive advantages and disadvantages which SOEs face and subject SOEs to greater competition scrutiny (Shiyang, 2014). However, this is unlikely to involve a strict competitive neutrality framework, at least in the short term. What the example of China highlights is that there can be conflict between public interest objectives and strict implementation of competitive neutrality, particularly in developing countries. At the same time, protecting SOEs from competition in the name of public interest objectives is likely to be counter-productive.

In India on the other hand, competitive neutrality has been pursued more energetically, primarily by the competition authorities (Gaur, 2014). Similar to China, SOEs are an important feature of the market in India, and following reforms, most are now competing with the private sector. 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 SOEs on capital markets. However, SOEs still receive some advantages and there remains a need for further reform in terms of ownership structure and governance in particular (Gaur, 2014). The Indian experience highlights the importance of the role to be played by the competition authorities in advancing competition principles in dealing with SOEs, but also that competition law can only go so far in implementing reforms. Their advocacy role in promoting further legal and policy reforms, however, can be extremely important.

Healey (2014) notes that a competitive neutrality framework is just one of several options for ensuring that government bodies do not obtain an advantage over private enterprises; others include corporatisation, privatisation, effective governance and improving independence, accountability and disclosure. Competition advocacy can also be an effective option. Competitive neutrality may also be used in a more flexible manner, in conjunction with other approaches and where appropriate:

> "*[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)

Overall, the literature suggests that transparency around the objectives and public interest mandates of SOEs is extremely important as well as around any decisions which protect or advantage SOEs 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 general, however, it is unlikely to lead to positive outcomes to protect the monopoly of an SOE in return for its fulfilment of public service requirements. As illustrated in South Africa (and discussed further below) this tends to result in higher prices to consumers which is counter-productive for widening access to services, while at the same time it can create long-lasting structural competition problems in key sectors. Developing countries have tended to rely more on competition policy and advocacy than a strict competitive neutrality framework to advance the goals of competition and competitive reform of SOEs.

3.2 **Anti-competitive conduct by SOEs**

A second, but related, concern with regard to the impact of SOEs on competition is that SOEs 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 SOEs 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.

In fact, theory suggests that state owned firms may be more and not less likely to abuse their dominance (Sappington and Sidak, 2003). SOEs 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 SOEs 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 SOE gaining a greater share of that market, while lowering profits through such activities is of less concern. Where an SOE 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).

Numerous instances of anti-competitive conduct by SOEs 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.[8] The Japanese postal service was accused of similar conduct (Copobianco 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). In South Africa, state-owned enterprises Telkom and SAA have both been found to have abused their dominance on two occasions.

3.3 **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 and value-for-money are both achieved. 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 2.

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

[8] Case COMP/35.141 (OJ L 125, 5.5.2001)

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.

Table 2: 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.
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)

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 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 above 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.

3.4 Conclusions on international approaches and relevance to South Africa

SOEs 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 SOEs in the first place. Even where the SOE 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 SOEs to SOE reform to the application of strict competitive neutrality frameworks.

A competitive neutrality framework encourages transparency and makes the advantages received by SOEs clear. This forces policy makers to acknowledge decisions which are being made in favour of SOEs 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 SOEs 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 in developing countries, a range of broader policy goals can be important, and SOEs can be critical in, for example, providing long-term investment in key sectors as well as promoting access. Therefore, it may be unrealistic or undesirable to apply strict competitive neutrality to SOEs.

The international examples illustrate that pro-competitive reform of SOEs and the introduction of competition to markets where SOEs have held monopoly positions is important, making SOEs more efficient and driving gains for consumers. However, if policy and regulatory decisions still favour SOEs and disadvantage rivals (see the example of Telkom below for example), then gains will be limited. 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 SOEs 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 SOEs. 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.

Where does this leave public interest goals? 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 SOEs with state-backed monopolies in return for public service obligations and towards a more competitive approach. Again, competition advocacy can be helpful in making this case. In cases where there is a genuine trade-off between competition and public interest, competition authorities can also be of assistance in informing these decisions by demonstrating the negative implications of stifling rivalry in key sectors of the economy.

4 Alternative approaches to achieving desired outcomes: experience from SA and international examples

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

4.1 Telecommunications

The effects of regulatory capture and abuse of dominance

South Africa's incumbent fixed line provider, Telkom, was incorporated in 1991 as a state-owned enterprise. It was partially privatised in 1997, when a 30% stake was sold to a consortium of international telecommunications companies (Malaysia Telecommunication and SBC Communications)[9] and then listed on the JSE in March 2003[10]. 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

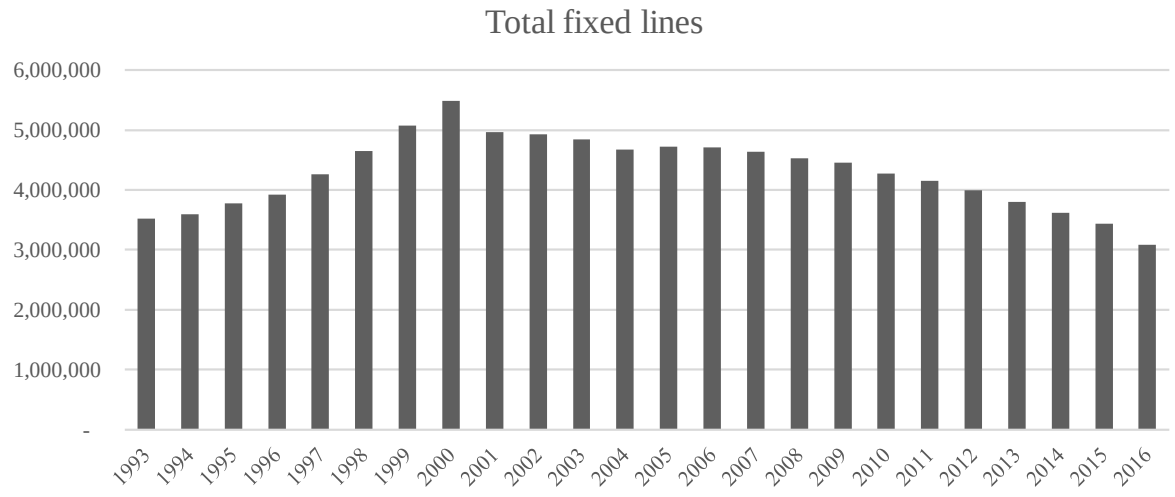
[9] See DTPS website.
[10] See Telkom website.

wholly owned by government and the manager of the Government Employees Pension Fund (GEPF).[11] 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's monopoly position was explicitly protected by government policy from 1997 to 2002; in theory, in order to allow Telkom to fulfil universal service obligations. In practice, Telkom did not meet these objectives. While the total number of fixed lines increased from 3.9 million in 1996 to 4.9 million in 2002 (

Figure 7), 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).

Figure 7: 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.

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, existing fixed line infrastructure belonging to parastatals Eskom and Transnet which was to be provided to the SNO to prevent it from having to start building a network from scratch, was instead given to a brand new state-owned entity, Broadband Infraco (Hawthorne et al, 2016). This left Neotel unable to compete effectively for a number of years. Broadband Infraco meanwhile has been an unmitigated disaster, suffering from financial mismanagement and failing to advance universal service goals as discussed above.

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

[11] See Telkom website.

stated in response to a question from the Financial Mail on why there has been reluctance to open the telecoms market to competition:[12]

> *"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."*

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. Following the judgement, there was a wave of entry by new VANS players (Hawthorne et al, 2014).

Further decisions taken by government and the regulator tended to favour Telkom at the expense of competitors. This is illustrated by the resistance to adopting local loop unbundling (LLU) and to enforcing facilities leasing provisions in the Electronic Communications Act (ECA). LLU 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 often seen as 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. Initially it seems that the attention of the DoC and ICASA was on voice services and call termination rates (Hawthorne et al, 2014), and this meant that ICASA only published a draft framework for LLU and held hearings on the issue in 2011. Following this, a change of minister in the DoC may have led to reduced political will to implement LLU which caused the process to stall, and substantial progress has not been made on the issue to-date (Hawthorne et al, 2014). ICASA published draft LLU regulations in 2013 and held a public workshop in early 2014 to consider the issue of

[12] My Broadband 19 October 2005, Hell bent on change. Available here.

wholesale access. The regulations are, however, still in draft form. In the meantime, Neotel attempted to force the issue by lodging a facilities leasing request with Telkom which Telkom rejected, leading Neotel to lodge a dispute with ICASA (Hawthorne et al, 2014). The Complaints and Compliance Committee (CCC) unhelpfully found that ICASA should have issued LLU regulations but did not order ICASA to impose terms and conditions for the case.

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.[13] 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).

In addition to the policy and regulatory environment skewing the playing field in Telkom's favour, the activities of the SOE itself served to 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 (VANS) 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[14].

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

[13] Government Gazette No 33252.
[14] Tribunal case number: 11/CR/Feb04

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.

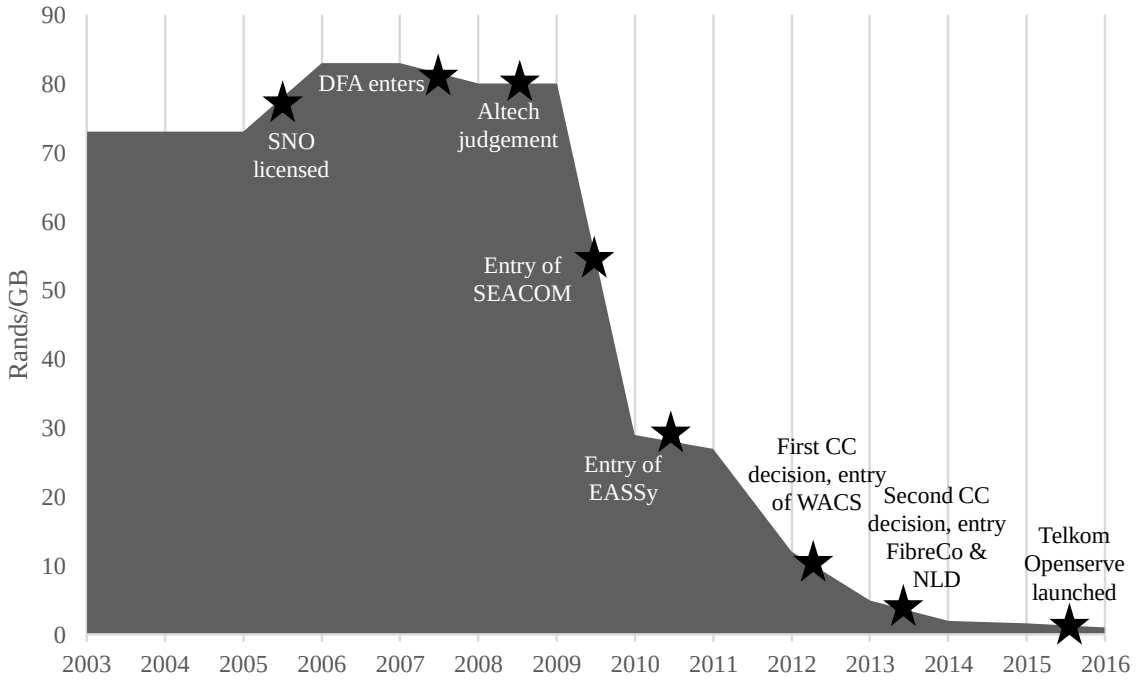
Following the Tribunal's ruling on the earlier case, the Commission negotiated a settlement with Telkom which included an admission of guilt, a further penalty of R200m and, perhaps most importantly, structural and behavioural remedies aimed at preventing Telkom from pursuing similar conduct in future and ensuring that competitors are able to access the 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[15].

Figure 8 illustrates the price of ADSL data per GB from 2003 to 2016 as well as some of the important competitive developments which have occurred over the period. From 2009 onwards, the price of ADSL fell dramatically. 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.[16] 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.[17] 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.[18]

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 critical interventions (the Altech judgement and the two competition cases) required litigation in order to achieve a more level playing field for competition.

[15] Tribunal case number: 016865
[16] See DFA website, available here.
[17] My Broadband, 5 June 2014. How South Africa is connected to the global internet. Available here.
[18] Hawthorne et al (2016)

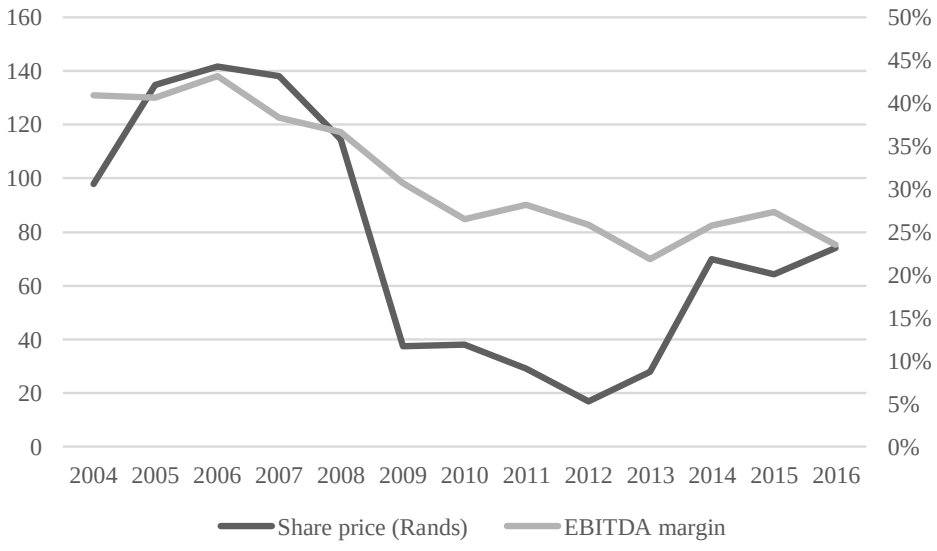
Figure 8: Average ADSL prices per GB, 2003 - 2016



Source: MyBroadband, available here and authors' own additions

Figure 9 illustrates Telkom's share price and EBITDA margin from 2004 to 2016. From 2006 onwards, the share price fell from a high of around R140 per share to a low of under R20 per share, before recovering from 2012 onwards to around R70 per share in 2016. The EBITDA margin began to fall at around the same time from a high of 43%, and declined steadily to a low of 22% in 2013, after which it seems to have improved slightly. It seems that Telkom's financial performance has deteriorated as greater competition has been brought into the market.

Figure 9: Telkom share price and EBITDA margin, 2004 - 2016

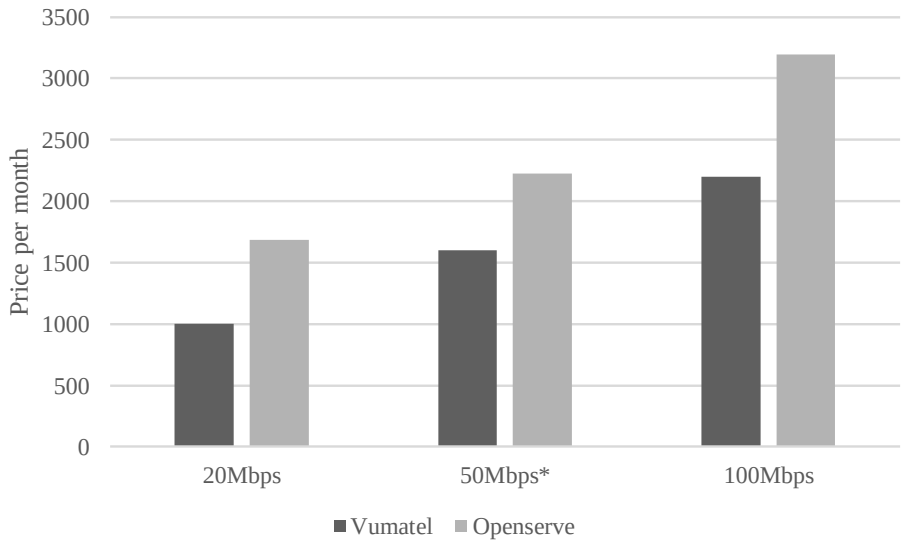


Source: Telkom Annual Reports, McGregor Research

In spite of the gains which have been made in term 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. Telkom still requires 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 are not using) – currently just under R200 per month.[19] 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.[20] Even Telkom's own fibre is cheaper than its ADSL products, partly due to the fact that fibre customers are not forced to purchase analogue line rental which they do not use.[21]

The separation of Telkom's retail and wholesale businesses as mandated by the competition authorities resulted in the creation of Telkom Openserve, a wholesale provider of fibre and ADSL, which was launched in October 2015. The intention of this development is that the retail and wholesale businesses run separately and that the retail business does not receive lower prices from the wholesale business compared to those offered to retail competitors. As discussed above, however, this does not prevent Openserve from charging high prices. This is illustrated by the fact that Telkom is able to offer substantially lower prices for uncapped fibre packages over competitors' infrastructure (Vumatel) than over Openserve's infrastructure as shown in Figure 10. The price of Telkom's uncapped packages is between 28% and 41% lower when it uses Vumatel's infrastructure instead of Openserve's. This suggests that Telkom is no longer providing its internal retail business with preferential pricing, but also indicates that Openserve's pricing is high compared to fibre competitors.

Figure 10: Average ADSL prices per GB (2003 - 2016)



Source: Data from MyBroadband, available here and authors' own calculations
Note: the upload speeds Telkom offers over the Openserve fibre are half those it offers over the Vumatel fibre.
**The mid-range packages offered over Openserve Fibre and Vumatel fibre are slightly different. Telkom offers a 40Mbps package over Openserve fibre and a 50Mbps line over the Vumatel fibre*

[19] My Broadband, 27 March 2017. How much more you will pay for your ADSL package from 1 April. Available here.
[20] My Broadband, 6 March 2017. Uncapped Prices – Fibre vs ADSL. Available here.
[21] My Broadband, 7 June 2016. Telkom fibre now cheaper than ADSL. Available here.

Universal service: different models and competition implications

Despite Telkom's past failures in delivering on Universal Service Obligations, and the perverse outcomes which arose from policy and regulatory protection of its incumbency, government seems poised to make the same mistakes again as it was announced in 2015 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.[22]

Further examples of alternative approaches to meeting universal service goals are provided by several municipal and provincial broadband projects which have been rolled out over the last few years. In general, those where government has built its own infrastructure with the intention of providing broadband through a state-owned entity have been considered expensive and duplicative of private infrastructure investment.[23]

One such project, the City of Johannesburg's "Johannesburg Broadband Network Project" (JBN 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.[24] In actual fact, 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 by some commentators.[25] The City initially entered into a build-operate-transfer (BOT) arrangement where Ericsson would roll out the network over three years at a cost of R1.012 billion and would operate it for a further 12 years for an annual fee of R279 million. After 15 years, ownership of the assets would be transferred to the CoJ. A joint venture between the CoJ and Ericsson called *BWired* was formed to manage the rollout. Following a contractual dispute, in 2015, the City Council decided to exit the BOT agreement and convert *BWired* into a municipal-owned entity MOE) to manage the assets on its behalf. The City paid R1.2bn to Ericsson to exit the agreement.[26] 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). The new mayor of Johannesburg has opened an investigation into the purchase of the network, stating that "*Despite the astronomical cost, few of these [public interest] benefits have been realised necessitating a thorough investigation of the decision*."[27]

The Western Cape Provincial Government (WCPG) took a totally different approach to broadband rollout, issuing a tender for a private sector provider to connect 2000 government sites (1250 schools, 220 libraries, and 300 health facilities) across the Western Cape. The targeted minimum speeds at each site is 1Gbps, though speeds of 10Gbps are planned for some sites. The strategy focused on making optimal use of existing infrastructure, including the facilities of Broadband Infraco, and ensuring that

[22] My Broadband, 21 February 2016. Don't give Telkom R744-million broadband contract. Available here.
[23] 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.
[24] Fin24, 5 October 2015. City of Joburg eyes wider fibre roll-out. Fin24. Available here.
[25] IT Web, 6 February 2015. ITWeb investigates: Joburg's R1.2bn broadband 'white elephant'. Available here.
[26] IT Web, 6 March 2014. 'ITWeb investigates: Unravelling BWired's network shenanigans.' Available here.
[27] Politicsweb, 10 March 2017. Investigation into City's R1.3 billion acquisition of Broadband Network. Available here.

the fibre backbone reaches areas that were not likely to be covered by the private sector on an open access basis. [28]

The project proceeded to the tender phase in 2012, but had to be re-advertised when the State Information Technology Association (SITA) challenged the provincial government's tender process citing national legislation that it (SITA) must handle all public procurement for ICT services. After re-advertising the tender twice, it was awarded to Neotel in 2014. The rollout commenced as a partnership between the provincial government, the State Information Technology Agency (SITA) and Neotel. Neotel made additional commitments, such as installing 384 Wi-Fi hotspots at government sites, spending 25% of the value of the contract with local companies, and providing seed funding for a broadband incubator to support the development of ICT services. The total amount budgeted for the project (i.e. rollout, maintenance, monitoring, and service provision) is R3.73bn over the ten-year duration of the project. R2.89bn was awarded to Neotel and R833mn to SITA.[29]

The WCPG model uses the 'government as anchor tenant' approach to encourage broadband rollout in areas that would not otherwise be economically viable. 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. This also informed the decision to manage the rollout as a public-private-partnership with a ten-year management contract, rather than following a BOT model, which would leave the City 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 indefinitely. In addition, Neotel is partnering with local wireless ISPs (WISPs) to connect some areas.

4.2 Energy

The energy case study will focus on Eskom and Transnet pipelines. The electricity case study will focus on understanding 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 pipeline examples illustrate 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.

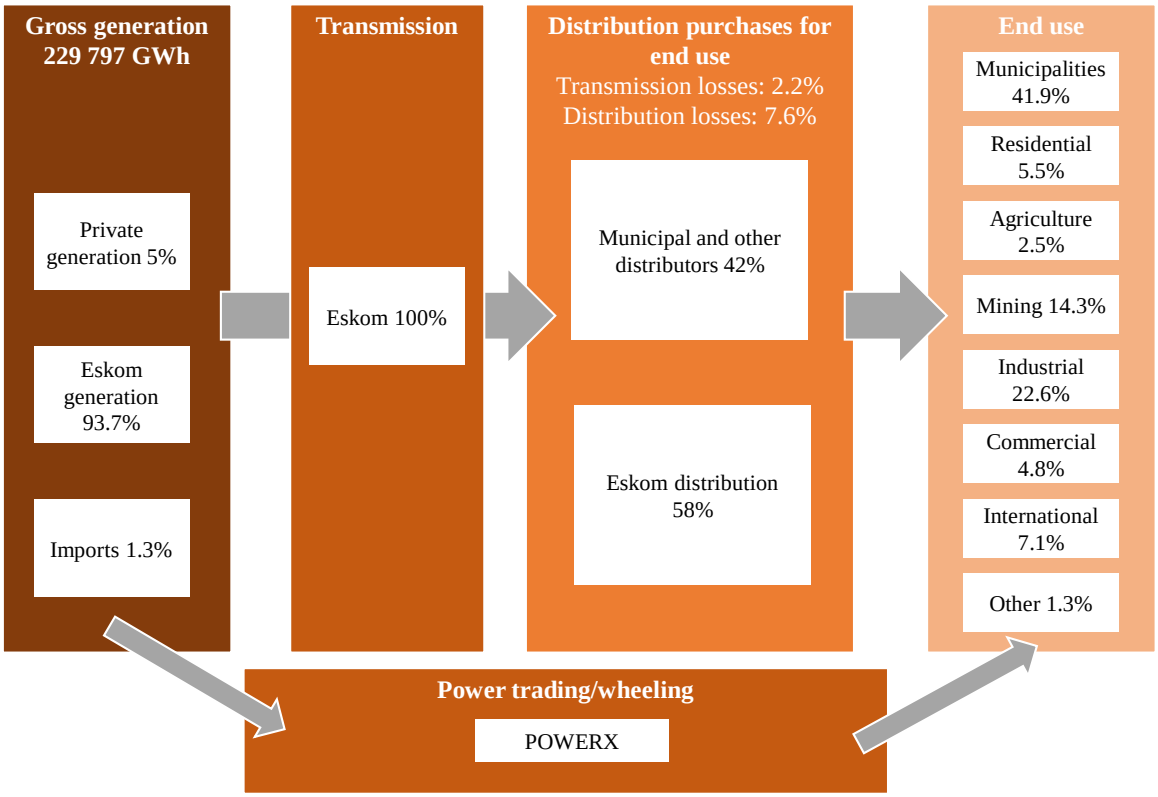
Conflict of interest vs. competition: Eskom as the single-buyer of electricity

Eskom is a vertically integrated monopoly, controlling the generation, distribution and transmission levels of the value chain, as illustrated in Figure 11. 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

[28] BMI Techknowledge. *Western Cape Broadband Projects.* Available here.
[29] 2015 Provincial Budget Vote, p12. Available here.

with Eskom. However, there are a number of factors limiting the expansion of these activities which will be discussed further below.

Figure 11: the electricity value-chain



Source: 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).

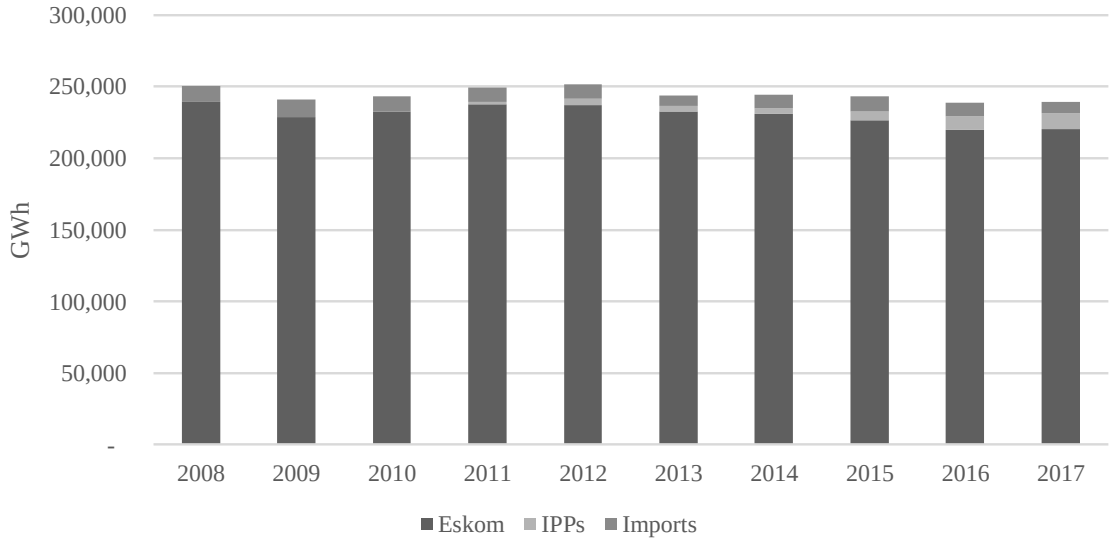
The White Paper on Energy Policy of 1998 committed to encouraging private sector participation in the electricity industry through independent power producers; encouraging competition and restructuring of Eskom; and permitting open, non-discriminatory access to the transmission system. The Electricity 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). 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.

A task force established to identify barriers to private sector involvement in the electricity industry found that Eskom was conflicted by being both a power generator and procurer of IPPs and, as a result, the DOE was designated as the procurer and Eskom the buyer. The idea was the ERA would 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 12 and

Figure ***13*** which illustrate that the proportion of electricity generation and capacity provided by IPPs has grown very slowly, peaking in 2017 at 10% of nominal capacity but only 5% of generation.

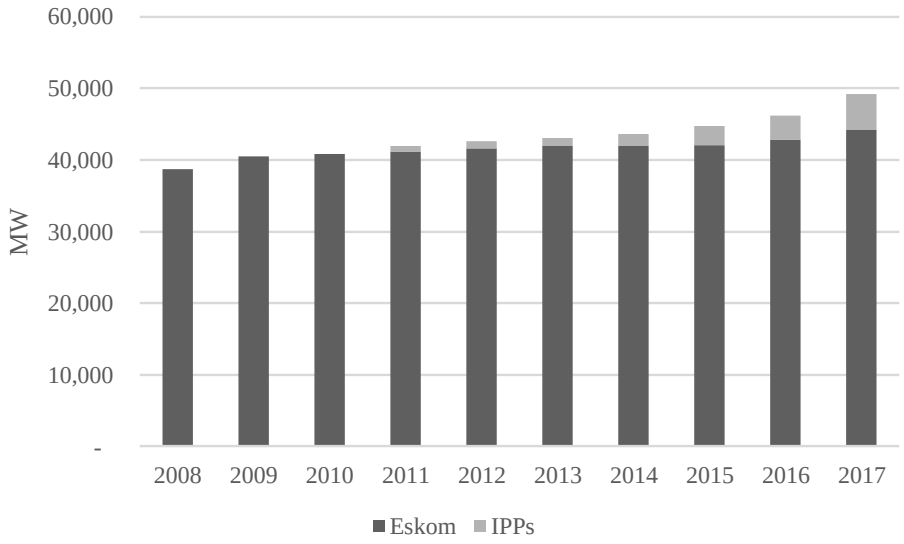
Figure 12: electricity generation by source, 2008 -2017



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, as well as potentially allowing customers to choose between competing power providers. 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 13: nominal capacity, Eskom and IPPs, 2008 -2017



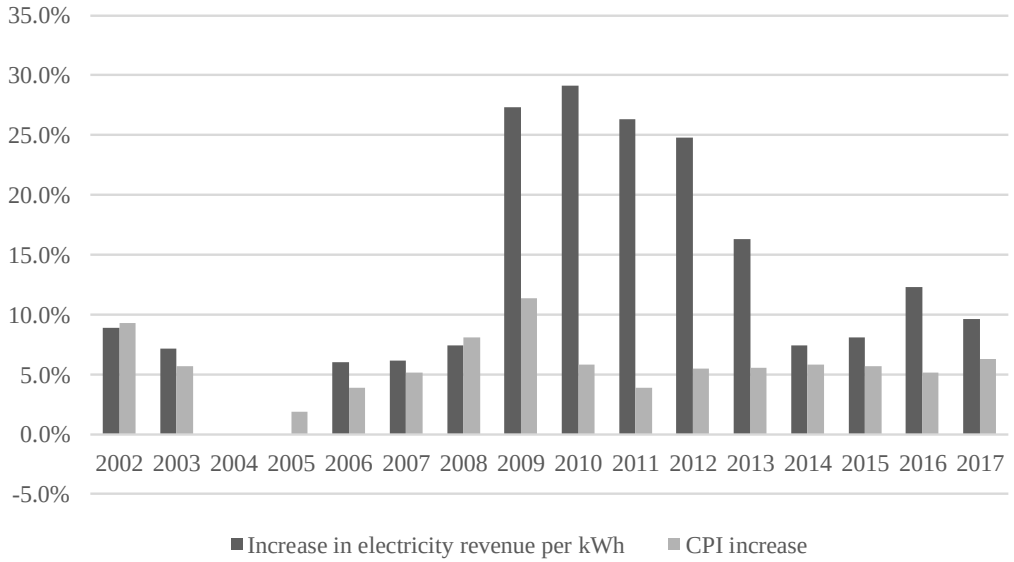
Source: Eskom annual reports

In terms of the 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, in order to incentivise the expansion of energy-intensive industry. This resulted in a poor technical and financial performance (Das Nair et al, 2014), and eventually, following rolling blackouts in 2007/08, 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 *14*, 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 14: 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.[30] 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.

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 (IP) 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 (which will be discussed further below). 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.[31] This is particularly an issue for small projects, and one of the reasons that government underwrites Eskom's commitments under the REIPP programme discussed

[30] See POWERX website here.
[31] Moneyweb, 24 July 2015. 'Wheeling the power'. Available here.

below. The second issue is the lack of a developed regulatory framework around network access and use of system fees.[32] 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. 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. 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). 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.

The REIPP Programme: a successful example of introducing 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 on the role played by vested interests in limiting the impact of the programme. In this paper, we consider the role played by Eskom, the SOE, in delaying and limiting the gains from the programme. First, we provide a summary of the REIPP and the outcomes of the programme so far. We reflect on how these outcomes differ from those where the investment decision would lie completely with the SOE. Then we consider the role played by Eskom in supporting or undermining the expected outcomes 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 producers 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 REIPPP 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 12 and

[32] Moneyweb, 24 July 2015. 'Wheeling the power'. Available here.

Figure ***13***), but also in terms of the competitive bidding process which has seen the prices for renewable power decrease substantially over the successive bidding windows. The cost of renewable energy has been declining in the successive bidding windows (BW). 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.[33]

However, since 2016 a problem has arisen as Eskom has failed to sign the remaining IPP contracts for bidding window 4 and 5 and has submitted to parliament that it is unlikely that they will be signed before 2018. Some of the projects have been waiting for contracts to be signed for over 2 years. The previous energy minister Tina Joemat-Pettersson had committed to signing the agreements by April 2017, however, more recently the new minister indicated that she needs to consult with the Minister for Public Enterprises before proceeding. 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 will be signed.

Eskom has argued that the IPPs resulted in higher cost 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 shutdown 5 coal-fired power stations as a result of the extra capacity provide by the REIPPs and current levels of excess supply.[34]

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 vs. alternatives.[35] 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 levelised cost of electricity (LCOE) estimated at R1.05 and R1.17 per kWh respectively.[36] While a proper comparison should be across all the IPPs, however you look at it, wind and solar PV are now cheaper than coal for new build electricity production. The CSIR conducted an independent study on the least cost energy mix for South Africa, and came to directly opposing conclusions to Eskom's (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. As such, it is hard to see how Eskom can claim that the cost of renewables is a problem.

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.[37]

Regulation is meant to deal with the market power in the generation level of the market through the regulation of prices (Newberry, 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 designate as the primary purchaser of electricity. As noted above, this gives it the power to determine the number of

[33] IT Web, 16 January 2017. 'Eskom 'blatantly distorted' renewable energy costs. Available here.
[34] Herald Live, 21 June 2017. 'Eskom fails to convince MPs on reasons for IPP deals delay' Available here.
[35] 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).
[36] IT Web, 16 January 2017. 'Eskom 'blatantly distorted' renewable energy costs. Available here.
[37] Engineering News, 22 August 2016. 'Wind, solar can supply bulk of South Africa's power at least cost, CSIR model shows'. Available here.

competitors that it has and the extent of their growth through its purchase decisions. The refusals or delays in signing the BW4 and 5 REIPP contracts amounts to denial of access to this essential facility. Through the exercise of its market power, Eskom can possibly reverse of gains made REIPP programme.

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

In 2011 the Commission received a complaint from Petroline RSA 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). In 2007, NERSA granted Petroline a license to build a petroleum pipeline from Maputo to Gauteng, in competition with Transnet's existing pipeline and another pipeline under construction. Petroline alleged that its project was rendered unviable when Transnet received a subsidy from the National Treasury as well as an unusual and favourable tariff decision from NERSA as the tariffs granted for Transnet's pipeline were too low for Petroline to be able to operate profitably. (Loopoo and van Wyk, 2013). 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*". Transnet's coast to inland tariff is kept artificially low through cross-subsidisation. The Commission did not have jurisdiction to consider the complaint as it is not empowered to review decisions of National Treasury or NERSA but it seems that Petroline subsequently put its investment on hold (Loopoo and van Wyk, 2013). This raises questions around whether economic regulation is sufficiently geared towards incentivising entry by competing pipeline operators.

5 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, given that both are key inputs into productive activities in the economy, raises costs and negatively impacts South Africa's competitiveness across the board. At the same time, SOE's themselves have been incentivised 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 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.

This begs the question of why South Africa's SOEs 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 international best practice has 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 SOEs 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.

Thus, both international best practice and South Africa's own experience provides an argument for introducing greater competitive rivalry to SOEs, 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 these models 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.

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