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Economic regulation of SA's public utilities

A concept paper

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1. Background

1.1 History of economic regulation

The term monopoly was mentioned and thought about for the first time around 1838 and it evolved over time after this. Adams in 1887 simplified the definition of a natural monopoly to the purely technical definition of scale economics and he was also the first to suggest direct regulation of a natural monopoly as a means of maximizing social welfare (Sharkey 1984).

Many authors had many different views on the definition of natural monopoly, but most agreed that it is difficult to label a given industry by a simple measure of economies of scale. Other conditions such as the definition of the market, the nature of demand in the industry and policy considerations must also be taken into account. A natural monopoly exists where a single firm remains as the most efficient producer, if the restrictions on competition are removed.

These natural monopoly concepts have over time presented a dilemma: On the one hand a natural monopoly is more efficient if a single firm supplies an entire market, but on the other hand this monopoly holder will be tempted to exploit its monopoly power to maximise his profits, in the absence of any competition.

Economic regulation was therefore seen to be necessary to ensure fair treatment to customers that is assumed to come naturally with competition and to ensure that competitors have fair access to network facilities that are controlled by incumbent service providers. Economic regulation therefore is applied when there is a case of "market failure" and to mitigate distortions associated with monopoly prices in situations where there are barriers to entry. Economic regulation should provide the right investment incentives to market participants and should protect consumers from monopoly abuse.

Originally the rationale for economic regulation was not so much natural monopolies as the conception that unregulated competition would be destructive of the quality, continuity, reliability, safety of services and unacceptably discrimination among customer groups. These industries were structurally competitive in the sense of inter- rather than intra industry competition, e.g. between railroads and other transport modes. (Kahn, 1988).

In general, the case for economic regulation thus emerged to mitigate costly market failures.

The term 'utility' is difficult to define precisely, but generally it is applied to the communications, energy, transport, and 'public amenities' sectors, including telecommunications, broadcasting, electricity, gas, railways, sewerage and water (Kahn, 1995). These industries usually exhibit two characteristics. Firstly, utilities provide a distribution, transmission, or transport service through a network of cables, pipes or other facilities which tend to enjoy such large scale economies as to become natural monopolies. Secondly, since the service they provide is often regarded as an 'essential' input to other industries, the efficiency of utilities has a widespread impact on the efficiency of other firms. Historically the social importance of such industries, and doubts about their ability to function in competitive markets, has resulted in a history of public ownership.

Regulation tends to vary from a light-handed or hands-off approach to one characterized by detailed and onerous constraints on regulated activities. The light-handed approach, as in Germany and New Zealand, placed primary reliance on general competition law and anti-trust institutions to address anti-competitive behaviour in an ex post manner. More detailed regulation, as in the US, UK and Argentina, reinforces the foundations provided by

competition law with explicit mechanisms to control the behaviour of natural monopolies, including pricing and handling of network access as well as financial and operational performance.

Related to the concept of economic regulation is the world-wide notion to liberalise and privatise public utilities that have been sparked by the idea that growth is essential for poverty reduction. The primary source of pro-poor growth will be the private sector, and particularly poor people themselves. It is thus important for the state to create a legal and regulatory framework for private sector enterprise and to maintain a commitment to pro-poor economic reform. To accomplish these objectives a regulator must be effective and efficient. In market economies the private sector is the predominant source of economic activity and main driver of economic growth. As economic growth proceeds, poverty is reduced with expanding economic opportunities for poor people through the growth in formal and informal employment (Kirkpatrick 2001)

The case for economic regulation of public utility markets is premised on the existence of significant market failure resulting from economies of scale and scope in production, that lead to higher unit costs if more than one firm competes in the market. Another possible source of market failure is information asymmetries in market transacting. Markets are able to maximize social welfare where consumers and producers are perfectly informed when making choices in the market place. Where one party to a transaction has more information than the other about the quantity or quality of the outputs to be transacted, then this party could act opportunistically, exploiting its superior knowledge to gain utility at the expense of the other party.

Since the 1960s however, the economics of regulation literature has also focused on circumstances where we might expect to find 'regulatory failure', where the regulation of markets might reduce rather than increase economic welfare. The following propositions are included in economics of regulation literature (Parker et al. 2002):

- | The institutional context is critical to the processes and outcomes of any regulatory regime
- | Regulation is associated with information asymmetries
- | Investment in a regulated environment is subject to a threat of hold up leading to under-investment
- | Regulatory regimes are prone to capture
- | A regulatory system should be both effective and efficient, i.e. it should achieve the social welfare goals set down by the government and it should achieve it at minimum economic cost.
- | Competition is superior to state regulation and should be preferred. Economic regulation attempts to simulate a competitive environment, but it can do so only in a 'second best' way because competitive markets generate superior knowledge of consumer demands and producer supply costs. In the economics of regulation literature there is a strong preference for competition over state regulation and, where there is not a natural monopoly, for adopting regulation only until competition arrives.

Since 1990 the World Bank has encouraged privatisation, deregulation and liberalization of national economies. However opposing views focused on the limits to free markets of incomplete information, inadequate markets and unworkable institutions – conditions particularly likely to apply in less developed countries.

Regulators have existed from early on in South Africa, e.g. the Electricity Control Board. However, the trend towards reducing the role of Governments in conducting commercial activity, through the transfer of responsibility and ownership of previously state-owned enterprises to the private sector, has lead to new developments in regulation. This trend has been particularly pronounced in the utility sector, where levels of market dominance by

incumbents are high and where consequent regulation is often deemed necessary. Where government traditionally undertook the dual functions of sector operation and regulation the transferring of responsibility for sector operation towards the private sector has led to increased focus on regulatory oversight. Particular emphasis is now placed on regulation which protects consumers, attracts investors and enables government to achieve its policy objectives, in a context where particular industries are no longer in ownership and therefore control of the state.

To date the evidence suggests that the effects of current regulatory reforms in developing countries are debatable. There seems to be serious errors in the sequencing of reforms, which have had widespread and significantly negative impacts, especially on the poor. Where privatisation has been undertaken in a hurry, under international pressure, and in the absence of good regulatory controls and competent institutions, as in Russia for example, the result has been the massive enrichment of a small elite, a flood of capital out of the country, rapid industrial decline, damage to social institutions and an enormous increase in the numbers of people living in poverty. In contrast China, where the development of a market economy has been both gradual and accompanied by strong state support for market-based regulatory reform, has enjoyed well above average growth and an impressive reduction in poverty levels.

Regulation is in essence thus the means by which private firms are constrained from anti-competitive behaviour (Minogue 2001). The temptation with regulation is because it redistributes resources and rents, politicians often use it for their own advantage and not to necessarily correct market failure.

1.2 Types of economic regulators

Three broad forms of economic regulation can exist namely:

- | The regulatory authority is part of a government department, notably where it is a section of the ministry and controlled by the minister.
- | The semi-independent regulator, which has some independence from the ministry but where decisions can still be over-ruled by a superior government authority; and
- | The independent regulator, where there is no right of appeal to a superior government authority, though there usually will be a right of appeal to the courts to ensure fairness and rationality in the decision-making process.

The independent agency is normally favoured by western advisors, who draw from the experience of regulation in the UK and US. However, regulatory independence and an impartial judicial review of due process may not be credible in some institutional structures (Parker et al. 2002). The implementation of regulation is a human and not simply a technical function, so the quality of the regulators is important and regulatory expertise in developing countries is normally in scarce supply. The credibility of any kind of 'independent regulation', modeled on the UK or US regulatory structures, may be weak and even where it does exist, deciding on the appropriate degree of discretion to be given to regulators is likely to be particularly problematic in the absence of experience of delegating decision-making powers to quasi-governmental agencies.

1.3 Regulatory principles

What are the main characteristics of a “sensible” regulatory system? This includes both the instruments that are chosen to achieve the desired result and the ways in which the chosen instruments are used (DFID 2004). Should the regulation be central or delegated and how precise should regulation be. Should there be discretion allowed or not.

Despite significant differences in the approach to regulation, a number of general principles are commonly regarded as desirable in regulatory practice (International Energy Agency 2003), namely:

- | The rule of law is the foundation of a regulatory system as it ensures the legitimacy of regulation.
- | Transparency is essential for regulatory quality. Public consultation and accessibility are two key instruments for improving transparency.
- | Neutrality means that the regulations should be neutral to all market players without favoring one or another group (non-discrimination).
- | Predictability and consistency: Rulings and judgments issued by the regulatory authority should be consistent and should have a reasonable degree of predictability based on previous rulings in similar cases.
- | Independence of the regulator from the regulated companies is a prerequisite for any sound regulatory system. Independence from government and political actors in the implementation of legislated policy may be desirable to ensure long-term stability of regulatory policies. This independence is critical in countries where there is public ownership of utilities. Independence also implies that the regulator needs to be provided with the adequate resources, skills and information.
- | Accountability: Independence of the regulator must not be confused with a lack of accountability. A regulator must be held accountable for its actions and must be subject to adequate efficiency controls.

The following is principles that are the outcome of an AFUR (2002) study and which is meant to be more applicable to the African context:

- | Regulatory governance – In the African context true independence remain the long-goal, but in practice government and utility regulators are closer than what might ideally be required.
- | Competition – In the African context regulation should focus more on mimicking competition, since there is limited scope for actually realising effective competition. The report also mentions a hesitation to actively promote private sector participation in industries that are politically seen as strategic sectors.
- | Non-discrimination – Public utilities are often charged with the responsibility for managing and delivering on government’s policy agenda in terms of improving access, and therefore they are often allowed a different regulatory treatment than other stakeholders may receive;
- | Proportionality – proportionality in terms of the sector being regulated as well as the skills base and financial capacity; and
- | Investment protection – investor risk is still discouraging private investment. There is still a big need to facilitate effective investment protection and promotion.

The AFUR (2002) paper distinguishes between external and internal regulatory governance for Africa.

External governance:

Regulatory agencies should be created by primary legislation.

The governance structure of the regulatory agency should have multiple board members/commissioners with staggered terms of office;

The human resource capacity of the agency must be commensurate with the regulatory mandate and level of ambitions of the regulator;

Independence of the regulatory agency is a long-term objective and important to create confidence in the regulatory system, but cannot always be taken for granted in the present African context;

Independence can be enhanced by clear definitions of roles and responsibilities and consistency in regulatory decision making, as well as ensuring that the regulatory agency is in control of its budget;

An element of regulatory discretion is important, but must be carefully balanced against the need to build investor confidence and the risk of setting unfortunate regulatory precedents, thereby increasing the cost to consumers.

Regulatory independence can be boosted by the existence of a robust appeal mechanism whereby the regulator's decisions can be challenged; and

The regulatory agency must be at liberty to conduct public hearings to inform it about its positions and decisions.

Internal governance:

Limited scope for government interference in the operations of the regulatory agency;

Clear differentiation in the roles and responsibilities between the governance structure of the regulatory agency and its management and staff.

Governance structure to be held accountable for the performance of the regulatory agency, with regular performance audits to be undertaken;

Well-defined and documented process for decision making and communication of decisions to stakeholders;

Established policies for handling conflicts of interest, e.g. through disclosure arrangements;

Where justified with reference to the scale and scope of the regulatory agency and its responsibilities, an internal audit function (not part of either the governance structure or management, but with access to both) should be established to cover financial matters, procurement and adherence to defined processes and procedures for decision making; and

Managers and professional staff must be awarded market related and competitive salaries and conditions in order to enable recruitment and retention of the appropriate calibre of competence and experience, with remuneration policies the responsibility of the governance structure.

Developing countries have different circumstances than developed countries. However, in general effective regulation is seen to balance the interests of the following three major different stakeholder groupings (AFUR, 2002):

Government's expectation of a regulatory system to ensure the efficient operation and development of a specific sector, as well as the achievement of political and social goals as set out in government policies.

Investors' expectation of a regulatory system to ensure a fair rate of return commensurate with their risks, as well as adequate protection from government intervention.

Consumers' expectation of fair prices for quality and reliable services, which in fact is protection against abuse of a dominant position.

Depending on government's objectives (e.g. if they want more investment) an independent regulator creates more investor confidence, since it is independent from politicians and regulated entities. However, the fact that a regulator is independent does not mean that it should not be accountable for its performance.

Kessides (2004) states the following definition for effective regulation:

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Regulatory procedures must balance predictability/consistency, accountability and transparency.
Regulatory bodies should:

- Have competent, non-political, professional staff – expert in relevant economic, accounting, engineering and legal principles and familiar with good regulatory practices.
- Operate in a statutory framework that fosters competition and market-like regulatory policies and practices.
- Be subject to substantive and procedural requirements that ensure integrity, independence, transparency and accountability.

Regulatory failure arises from a combination of the information problems facing regulators and the complex relationships inherent in the control structure of every regulatory setting. Regulatory failure is exacerbated by a lack of technical and economic expertise in critical areas.
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2. Literature review regarding economic regulation of public utilities

This section provides a summary of the regulatory experience in the US, Sweden, New Zealand, the UK and a little bit about developing countries.

From the nineteenth century utility services, such as telecommunications, water and sewerage, gas, electricity and railways were brought under direct state ownership and control in many countries. Since the 1980s more and more countries have been privatising their public utilities. The reason for the privatisation was that it was believed that this would typically lead to increased efficiency and higher quality of supply for consumers.

The reason for state ownership was mainly seen as the strategic nature of the industry and also the “natural monopoly” issue. However, some of the activities undertaken by these utilities were not naturally monopolistic. This had led to unbundling of the potentially competitive areas from the monopoly parts. The monopoly parts are regulated by a regulator. This is now the model in the UK and in other parts of Europe, following privatisation of major utilities. This is also the approach adopted to regulating monopoly utilities since the nineteenth century in the USA (Parker 1999).

2.1 United States of America (US)

Miller et al. (2002) state that the performance of public utility regulation in the US has been subject to heavy criticism virtually throughout its entire period of existence. The early period of public utility regulation, from around 1907 up to the time of the Great Depression in the 1930s can be considered as an experimental or learning period. Regulation provided markets in these industries with greater stability and access to these utility services grew significantly, but services generally were not extended to rural areas. Public utility regulation was however seen more as a hindrance to economic growth than as a facilitator of it. Consumer complaints about high and discriminatory prices, poor quality of service and failure to extend service remained at a high level. Economists generally had been highly critical of the ineffective performance of regulation up to the 1930s, the critics had no real alternative institutional structures or policies to suggest. During the Depression up to the 1960s, the general decline in economic activity was associated with a decline in utility services and little new investment.

During the 1930s, a two-tier system of regulation developed that included federal regulation of interstate services and state regulation of intrastate services. Although intended to be cooperative, and to a degree constructively competitive, this system was often competitive in unproductive ways, e.g. jurisdictional disagreements.

After World War II, a stable, growing economy stimulated utility expansion. Complaints regarding tariff and access regulation continued to grow. By the 1960s, the utility industries had reached maturity in a stable and growing economy. Universal service had been pretty much achieved. New technologies and economies of scale were providing a basis for declining unit costs. On the surface, there was considerable evidence that the institutional model of regulated public utilities was beginning to work as intended. The period from 1980s forward has provided for further experimentation and reform in utility regulation. Different commissions have adapted regulation to deal with competition and monopoly issues in different ways.

The general view is that public utility regulation in the US has, for the most part, failed and the principal criticism relates to the issue of regulatory capture by the regulated entities. The occasional examples of innovative and effective regulation would appear to provide evidence for why regulation failed, not whether it has failed. However, the interesting part is that whenever regulation has been reduced, weakened, or eliminated, the performance of highly imperfect utility markets has not improved; in most cases market failures have become worse. The question thus is whether the act of establishment of a regulator tends to reduce market failures, so that even with failed regulation, the result is better? Are the regulatory structure good, but the conduct and performance bad? (Miller et al. 2002).

Many countries try to avoid the elaborate legalistic process, as has developed in the US. They are also establishing more informal processes in an attempt to provide greater flexibility and more expeditious decision making than what happens under US regulation and they are adopting less complex standards for decision making.

It has been found in the US that independent regulatory agencies require strong, independent, proactive people to make them function effectively. However although independence from political and industry influence on decisions is vital, engagement with politicians and industry managers is essential in order to maintain expertise and demonstrate credibility (Miller et al. 2002).

2.2 Sweden

The electricity industry reform process was initiated in Sweden around 1991, mainly because of the weakened Swedish economy that started in the late 1980s. It was seen as a means to improve the economy and the main aim was the establishment of an efficient electricity supply system.

The key issue was to allow all users access to the electricity grid under non-discriminatory conditions. This promoted competition between electricity suppliers and created an opportunity for customers to enter into agreements with the supplier whom they consider offers the best price and conditions. Access to the grid on equal terms and conditions were seen as very important to make the free market work successfully.

Structural changes could be observed two years after the reform process started. Although the object has been to liberalise the electricity market, some municipalities have considered the risk or effort involved unacceptable. Accordingly, some privatisation has taken place, although this was not the force behind the new reform.

The Swedish Energy Agency, an independent regulator (although approval by the Minister is required for some guidelines), fulfils the regulatory role and it has the authority to supervise the monopoly in order to protect the interest of consumers and to stipulate specific guidelines for price development.

Decisions by the Regulator can also be appealed. Swedish regulation also promotes a high degree of self-regulation within the network monopoly.

Economic regulation has two main purposes:

- | Creation of an efficient corporate structure and efficient companies, i.e. regulatory efficiency.
- | Monopoly prices must be reasonable and excessive monopoly profits must be avoided.

2.3 New Zealand

New Zealand is one of many countries that began restructuring their electricity supply industries from around the 1980s. Until the mid-1980s, utilities in New Zealand were generally statutory monopolies under state ownership, and run by Government trading departments or divisions. Since these utilities often produced 'essential' inputs used by firms in the private sector, their efficiency, price-setting and investment behaviour had a major impact on the competitiveness of the economy as a whole. However, their performance was judged by critics to have been poor.

Several reasons have been provided for the inadequate performance:

- | The conflict they faced between various commercial and social objectives;
- | An operating environment in which competition was usually lacking;
- | Access to funding from government sources at favourable rates of interest;
- | Lack of accountability to government;
- | Inadequate monitoring of performance by government; and
- | Political interference.

As part of wider economic liberalisation policies, these industries were progressively reformed in the years following 1985. The most important steps were:

- | The removal of nearly all statutory monopoly rights so as to expose utilities to competition;
- | The corporatisation (and in some cases, privatisation) of numerous state trading departments so as to place them in a company form of organisation, with commercial objectives;
- | Their restructuring to isolate the natural monopoly elements from the more contestable parts of the industries;
- | The abolition of social service obligations or their explicit funding by government rather than, as previously, by cross-subsidy with profits earned by the business in incontestable markets.

One of the intentions was to remove decision-making in State-Owned Enterprises (SOEs) from direct political interference. While this was a step forward, it was argued that certain problems remained such as the fact that managers lack the incentives to perform normally because they face no threat of take-over. Secondly, the incentives provided by the possibility of bankruptcy are regarded as minimal because of an implicit government guarantee. By reducing risk, this may distort the cost of capital in a downwards direction. Finally, some claim that SOE decision-making is subject to residual government interference, since the directors are political appointees, and an annual 'statement of corporate intent' has to be approved by the government. Such general considerations have been argued to justify privatisation of the SOEs, as has happened in many cases, including Telecom and New Zealand Rail. (Bollard et al)

In New Zealand it was important that the design of a regulatory regime must weigh up the potential costs and benefits involved. The concept of 'light-handed' regulation emerged from the policy debate concerning the deregulation and privatisation of telecommunications during the period 1987–90. New Zealand's policy of light-handed regulation does not mean zero regulation. The critical elements of the policy of light-handed regulation are competition law and information disclosure. (Bollard et al)

A fundamental premise has been the deregulation of the supply industry's potential competitive sectors and the imposition of pro-competitive regulation on those sectors considered to have natural monopoly characteristics.

2.4 United Kingdom

The UK's privatisation reform efforts have been among the world's most ambitious.

Electricity privatisation in the UK has occurred in the context of the privatisation of much of the formerly state-owned UK industries and the reduction of the central government's role in the national economy. The overall privatisation of industry was initiated shortly after a conservative government came to power in the UK in 1979 under the leadership of Margaret Thatcher. A primary aim of the new administration was to reduce government's role in the economy.

Partly due to the fact that the electricity industry strongly reflects the features of a natural monopoly, electricity was among the last and more controversial privatizations. The electricity industry was initially restructured by the government along functional lines. Regulation was gradually withdrawn from generation and retailing, but kept for transmission and distribution.

In terms of efficiency the reform of the electricity industry in the UK is generally viewed as a success. Issues regarding fairness and equity have however been controversial.

Privatisation in the UK evolved over time. The central government's role in electricity has grown gradually since the industry's beginning in the later part of the nineteenth century. In 1947, the electricity industry along with several other "key" industries was nationalised by the UK's post-war labor government. In 1957 government's role was extended further by the establishment of a Central Electricity Generating Board (CEGB) whose responsibilities included control over the operation of electricity generation and transmission facilities and all related investment decisions. An Electricity Council acted as a form of regulator.

In the 1960s and the 1970s several attempts by the government at reforming the electricity industry were made. However, due to both a lack of commitment and to political turnover, these efforts largely proved unsuccessful. By the 1970s the UK experienced several economic setbacks, many of which were attributed to an excessive state role in the economy. Privatisation of nationalised industries was intended to achieve several goals. Foremost among them were to reduce the central government's role in economic decision making; to force privatised companies to become more accountable to owners; to increase net state revenue through asset sales and divestiture of fiscal draining state enterprises; and to encourage the creation of a shareholder society through widespread stock ownership.

One of the most important elements of privatisation involved the restructuring of the electricity industry prior to its sale.

The privatisation and deregulation the UK natural gas industry has also led to an increase in the use of natural gas in electricity generation. The UK government sold British Gas around 1986. British gas dominated natural gas transmission, distribution and marketing. An independent regulator, the office of Gas (OFGAS) was created as a watchdog, similar to OFFER the electricity regulator. A substantial number of competitors have entered the gas industry.

Privatisation of electricity has led to natural gas becoming the preferred fuel of choice in UK electricity generation. Independent power producers have played an increasingly important role in electricity generation in the UK.

Deregulation in the UK was driven by the belief that electricity prices were held artificially high due to the inefficient operation of government-owned electricity utilities. The government could have attempted to close this gap via stricter regulation, but instead chose competition (generation and retailing) and price caps (transmission and distribution) as a means of reducing electricity prices. In part, this decision stemmed from the belief that the regulated utilities were better equipped than the regulator to know what kind of efficiency improvement measures could be undertaken once they had an incentive to make them. The other factor was political. Much improvement in the efficiency gains in the UK electricity industry were because of workforce reductions, which would not have been possible under a regulator, who would have been held accountable for unemployment.

Other regulators of public utilities in the UK are UK telecommunications industry (OFTEL) and the privatised water industry (OFWAT).

The single person regulator in the UK has been criticised for lacking debate – this model has now changed to commissions consisting of more than one person. In the US state public utility regulatory commissions are established. In the UK regulation is at the national level whereas in the US local governments (or states) play a prominent regulatory role. The UK regulators tend to have lean staffing levels as opposed to the US where there a large number of employees in regulators. The electricity regulator in the UK has been a target of criticism by both consumers of electricity and the electricity industry itself, e.g. too favourable to industry and lack of commitment to previous regulatory decisions (UK case study has been obtained from: <http://www.eia.doe.gov>).

One of the lessons from the Britain case study is the importance of the sequencing of events, i.e. privatization implemented too quickly (without proper market design) can forego the option of future restructuring and proper regulatory design.

2.5 Argentina

In Argentina responsibility for infrastructure services is divided between the national and the provincial governments. The national government initiated a privatisation program in 1989 for all utilities. Like the United Kingdom, the national government created industry-specific agencies for the four main utilities: electricity (ENRE), gas (ENARGAS), telecommunications (CNT), and water and sanitation (ETOSS). But unlike the United Kingdom, Argentina has opted for regulatory commissions for each agency rather than a single regulator.

2.5.1 Gas and power

Most successful have been the two agencies covering the power sector, ENRE (Ente Nacional Regulador de la Electricidad) and ENARGAS (Ente Nacional Regulador del Gas). Both are reasonably independent, autonomous, and accountable. They have their own sources of funding and sufficient funding to perform all their tasks—though some would argue too much funding. Both have a small, technically competent, well paid staff (less than 100, including regional offices), and the regulators on their commissions are accountable to both the legislative and the executive branches of government. But both have been criticized for the absence of any systematic external scrutiny of their practices and administrative processes and for the lack of transparency in some of their decisions. This lack of transparency increases the risk of capture— and the risk that regulatory costs may be too high and that users may be overcharged. There is public concern about the power that the energy secretary still retains over some aspects of the regulation of the gas and electricity sectors. The secretariat is the first

administrative step in appeals of regulatory decisions, implying that in conflicts between a regulator's decision and the government, the regulator is likely to lose. (In other countries, the appeal will often be straight to the courts.) Both agencies still lack a key regulatory tool—a set of accounting standards and procedures.

2.5.2 Water

The water regulator, ETOSS (Ente Tripartito de Obras y Servicios Sanitarios), has been less effective. Although its performance is improving, it has taken about two years to get out of the starting blocks. Some issues are hard to resolve. For example, a potential problem for the agency's independence is that its commission represents the interests of three different levels of government: the national government (as owner of the assets), the municipality of Buenos Aires, and the province. All three layers of government may be controlled by different political parties, which could lead to political tensions that might affect decisions. ETOSS is funded by a fee the concessionaire levies on consumers (2.67 percent of the bill). There may be too many staff and they lack many of the skills required for effective regulation, indicating that the agency may not have sufficient autonomy or accountability. ETOSS has started to fix these problems by hiring international consultants to deal with specific issues. As a result of initial failures in resolving problems with the concessionaire, ETOSS still operates under heavy scrutiny from the media and other interest groups. This shows the importance of getting things right at the start. Once lost, credibility is hard to rebuild—especially when there is a lack of transparency in decision-making.

2.5.3 Telecommunications

The weakest performer has been CNT (Comisión Nacional de Telecomunicaciones). It was created by a 1990 executive decree that divided the regulatory responsibilities for telecommunications between CNT and the Secretariat of Telecommunications, thereby creating a not so independent regulator. The decree creating CNT has already been modified twice, reducing the agency's regulatory role and expanding the executive's. CNT struggles to achieve autonomy in decision-making or expertise. The problem stems in part from the executive branch's influence on some key decisions and in part from the way regulatory responsibilities have been divided between the ministry and CNT. For example, end-user rates and access rates need to be harmonized, but the ministry is responsible for the first, and CNT for the second, which has led to some controversies. CNT also sits with a staffing problem regarding the skills required to address the complex issues it faces. It has hired consultants to address the rebalancing issue, and staff training is on the regulators' reform agenda. CNT's accountability performance has also been under the spotlight. CNT has been slow with making decisions or resolving conflicts. CNT's activities have been less transparent than it should be, even though CNT reports directly to the president's office. Overall, the regulatory experience in telecommunications has shown the tough political consequences that failures in institutional design can have for policymakers.

2.5.4 The provincial regulators

Provincial governments began to follow the national government's privatization (water and electricity) lead in the mid-1990s. The institutional arrangements adopted by the national and provincial governments have much in common and the provincial regulatory institutions faced problems similar to those at the national level. Most provinces are following the national government's lead, opting for industry-specific agencies—though some, such as Catamarca, have opted for the preferred public utility commission approach. Most of the focus at this early stage

centres on staffing and training. Some provinces have fallen short in ensuring the political independence of commission staffs, with some staff political appointees. Staff numbers are reasonable, however (ranging from seven to forty). The regulatory agencies avoided an important misstep early on, rejecting suggestions that they hire much of the personnel of the public utilities declared redundant by the concessionaires. That would have led to conflicts reflecting the new regulators' resentment at not being kept on by the private company taking over the utility. Funding seems secure—all provinces have introduced a regulatory user fee. As at the national level, processes are not yet adequately defined, raising concerns about accountability. In some cases the problems led to the cancellation of privatization processes.

The Argentinean examples show that the biggest challenges for regulatory design are achieving political independence and introducing rules to ensure accountability. Political independence requires a commitment by the government early on in the process. Accountability requires robust procedural and sound accounting rules. However, ensuring the independence of the regulatory agencies is likely to be more complex because politicians often have a hard time giving up control over resources considered politically sensitive. Argentina's experience shows that even the most innovative reformers can have problems ensuring the independence, autonomy, and accountability of regulatory agencies. But these problems, even in the case of telecommunications, have not yet been serious enough to offset the short-term gains of privatization. The Argentine public is receiving better utility services—and often at lower prices—than before privatisation. Whether these gains can be sustained in the longer run depends on the strength of the regulatory agencies and on their capacity to deliver on their responsibilities. Time is the test for these institutional issues. (Estache, 1997)

2.6 Economic regulation in developing countries

In the 1990s a large number of developing countries introduced private investment in public utility infrastructure. For much of the last century state ownership of public utilities was the preferred option in most countries, including developing ones. Private sector monopolies were not seen as attractive given the possible threat of abuse of market power. More recently, however, in the face of evidence of 'state failure', the emphasis in public policy has switched from direct state ownership to private ownership but with state regulation (Parker and Kirkpatrick 2002).

The experience regarding privatisation in Sub-Saharan African countries have however been disappointing in certain instances, where the benefits can not always be seen. While donor and private financing of public investment has declined, many governments have had to cut public spending in order to pay back creditors. This debilitating combination has resulted in a vicious cycle of deteriorating infrastructure, high costs and low revenue. Consequently, millions of Africans lack adequate access to water, electricity and sewerage (Bayliss and McKinley, 2007). Ineffective regulation contributed to these problems.

3. How does South Africa fit into the economic regulatory history?

Prior to 1994 all public utilities (energy, telecoms, water and transport) were mainly dominated by powerful incumbent monopolies, owned by government with very little oversight or regulation. Post-1994 and in line with international best practice independent regulators were proposed in various policy papers. 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.

Government (Ministry of Public Enterprises 2000) based on the impacts of restructuring of SOEs internationally saw the benefit of taking the principles that could help shape the approach to restructuring in South Africa into account:

- | Promotion of competitive markets
- | Where competition is not feasible, a regulatory framework needs to accompany any restructuring initiatives.
- | Government to clearly spell out its intentions and envisaged relationship with the restructured SOEs in individual shareholder compacts with enterprises, in the corporate governance framework for all SOEs and in a clear policy framework and programme for restructuring.
- | Government to explore options to enhance productivity, profitability, investment and innovation.
- | Government to maximize the optimal return to the shareholder (fiscus), whether through the proceeds from equity sales, dividends and/or tax returns.
- | To ensure that the elements of public goods and services delivered by SOEs are still accounted for, restructuring proposals should assess their impact on overall social welfare.
- | Government to be transparent in addressing its social objectives.

Within each industry or sector, Government realised the importance of enhancing the efficiency and effectiveness of SOEs to secure services and infrastructure delivery at an optimal cost and level of service. This aim amongst others requires access to globally competitive technology to ensure that they are able to provide the best available and affordable services.

Foreign direct investment was also seen as important to attract into the country to provide access to markets and technology and to finance growth and the requirements for industrial competitiveness.

The optimal benefits from restructuring are only realized when the markets in which the SOEs function are reorganized to promote competition. The expansion of markets internationally and technological advances create increasing opportunities for promoting competition, even in industries that were traditionally regarded as natural monopolies.

The establishment of a regulatory regime prior to the restructuring of a public monopoly has become standard practice in South Africa, and some regulators now exist. Some concerns were raised in government circles regarding the proliferation of independent regulators as the restructuring programme is accelerated. The lack of clarity about roles and responsibilities between regulators and government was also seen as a potential contributor to market uncertainty that could eventually undermine the achievement of the restructuring objectives.

Network industries (electricity, water, telecommunications, gas and petroleum pipelines) by virtue of their functionality and social impact, require regulation to ensure universal access and affordability of essential services.

In many industries it is foreseen that the level of regulation will be progressively reduced as the market becomes more competitive. Dispensing with a sector-specific regulator during the transition or even afterwards is not necessarily the most sensible approach. Even when competition has been introduced, regulation of entry and exit, prices, quality and accessibility is often deemed essential.

SOE restructuring is quite difficult when the state plays diverging roles (e.g. producer, regulator, consumer, policy-maker and shareholder). Therefore the regulatory provision that accompany such restructuring will need to be designed to incorporate these diverse responsibilities. Although the values and objectives of regulation will vary in each case, social welfare will be an equally important objective along with the price and performance orientated objectives.

3.1 Energy sector

This section will only focus on the network infrastructure industries with natural monopoly elements, such as the gas, petroleum pipelines and electricity industries.

International relations had a profound effect on South Africa's energy sector during the apartheid era. The energy sector focused on investments shaped by a preoccupation with self-sufficiency. An important feature was also excessive secrecy, which made rational and public debate on energy policy basically impossible. As the economy opened up to global competition post-1994, the need for the role of the state in the energy sector was redefined and restructured. As per the white paper on energy policy (1998) greater emphasis was being placed on commercialisation, corporatisation and in some cases privatization. Energy markets were generally restructured to encourage greater competition, even in the grid-based electricity and natural gas industries traditionally regarded as natural monopolies, which necessitated the development of increasingly sophisticated regulatory regimes. This does not mean that state involvement in the sector has disappeared; rather that it is changing and being redefined to maximize the achievement of national policy goals. Private finance becomes increasingly important, which has profound effects on the structure of energy investments and markets. The challenge for government thus is the creation of a policy framework with appropriate legal, fiscal and regulatory regimes which will attract domestic and international investment, while ensuring that national policy objectives are met.

In 1994, central to the ANC's comprehensive Reconstruction and Development Programme (RDP) are two imperatives:

- | Urgency of achieving rapid economic growth; and
- | Urgent need for growth to contribute to development, particularly eradication of poverty.

Subsequently Government elaborated the Growth, Employment and Redistribution (GEAR) strategy as one of its principal instruments for the realization of the policy objectives contained in the RDP. The two core strategies of the GEAR:

- | Promotion of economic growth through exports and investments; and
- | Promotion of redistribution by creation of jobs and reallocation of resources through the budget.

It was recognised that the energy sector can play a major role, since it powers productive activity and provides basic energy services for households.

The key objectives for the energy sector according to the white paper of 1998:

Objective 1 – Increasing access to affordable energy services

Objective 2 – Improving energy governance

Objective 3 – Stimulating economic development. Specifically with this objective it is stated that Government will encourage competition within energy markets and where market failures are identified government will intervene through transparent, regulatory and other carefully defined and time delineated mechanisms, to ensure effective delivery of energy services to consumers. The need to stimulate fixed investment from both local and foreign sources is recognized by Government will work towards an investor-friendly climate in the energy sector through good governance, stable, transparent, regulatory regimes and other appropriate policy instruments.

Objective 4 – Managing energy-related environmental impacts

Objective 5 – Security of supply through diversity

3.1.1 Snapshot of the South African electricity industry

The South African Electricity Supply Industry (ESI) is dominated by a state-owned and vertically integrated utility, Eskom. It supplies about 96% of South Africa's electricity requirements which equals more than half of the electricity generated on the African continent. Eskom owns and controls the high voltage transmission grid and it supplies about 60% of electricity directly to customers. The remainder of electricity distribution is undertaken by about 180 local authorities. The municipal distributors buy bulk electricity from Eskom with some also generating small amounts for sale in their areas of jurisdiction. A few industries have private generation facilities for their own use, accounting for 2.8% of total electricity produced.

Government policy (as defined in the 1998 Energy White Paper and subsequent Cabinet decisions) centers upon restructuring of both the electricity supply and distribution industries, with the main aim of increasing competition and increasing the levels of participation and ownership by the private sector and BEE groups. Government policy also focuses on the national electrification programme and a move towards cost-reflectivity in electricity prices with transparency where subsidisation occurs.

The emphasis of restructuring is:

Generation

- In 2003, Cabinet approved private-sector participation in the electricity industry and decided that future power generation capacity will be divided between Eskom (70 percent) and independent power producers, or IPPs (30 percent). The Department of Minerals and Energy (DME) was mandated with the responsibility of ensuring private-sector participation in power generation through a competitive bidding process and that diversified primary energy sources be developed within the electricity sector without hindrance.

Transmission

- The transmission division of Eskom will continue to supply transmission services.

Distribution

- The major reform here focuses on the consolidation of the approximately 180 distributors (Eskom and municipalities) into six Regional Electricity Distributors (REDs) with the aim that each RED will be financially viable in its own right.
- Cost-reflectivity of tariffs with transparency regarding tariff compilation and any accompanying subsidies.

National electrification programme.

3.1.2 Regulatory overview

In 1909 a Power Companies Commission was established to “enquire into the desirability of the establishment of large electric power companies in the then Transvaal area (now Gauteng). The commission recommended that while electricity supply normally leads to a monopoly situation, the supply of electricity should basically be left as far as possible to private investment, but should be placed under government control and be subjected to regulations which shall secure the equitable supply of power, the public safety and public interests generally.

The commission recommended that the electricity supply industry remain in private hands mainly because of the need to attract foreign investment in industry in South Africa and also because the need for state capital for growth meant that the government was simply not in a position to finance the construction of a major power company -Report of the Power Companies Commission, 1909 (*Mountain 1994*).

The Transvaal Power Act of 1910 regulated all undertakings supplying power to others, except the municipalities who were separately regulated by the Provincial Administrator, as had been established by provincial ordinances in 1905.

The Electricity Act of 1922 repealed the Transvaal Power Act of 1910 and was the first electricity Act to apply to the Union of South Africa as a whole. The first chapter of the Act provided for the establishment of the Electricity Supply Commission (Eskom), and the Act also made provision for the establishment of the Electricity Control Board (ECB), which had a restricted role and was basically functioning as an arm of government. The ECB had to consider license applications from municipalities, private sector and Eskom.

The year 1948 marked an end to any significant private ownership of the electricity industry and the beginning of public ownership and centralised control under Eskom.

The Electricity Act of 1987 formally established the National Electricity Regulator (NER) to take over regulatory responsibilities previously vested with the Electricity Control Board. However, it was not until 1995 that the NER was actually established, following a 1994 amendment to the 1987 Electricity Act. The 1994 amendment was an attempt to create a regulatory framework, but was riddled with ‘gaps’ such as third party access, the licensing process and licence categories.

Following the National Electrification Forum (NELF) process (1992/3), all electricity supply industry participants (including Eskom and municipalities) agreed on the establishment of a national electricity regulatory authority. The NER was therefore established as the national electricity regulatory authority in terms of an amendment to the Electricity Act in 1995 to undertake that role.

Following the promulgation of the Electricity Amendment Act of 1995, the NER became an independent body with its own legal persona. The Act also provided for the NER to be funded by means of licence fees imposed on electricity generators.

The main tasks of the NER in terms of the Electricity Act of 1987 included:

- | Licensing
- | Price determination
- | Dispute resolution
- | Information collection where necessary
- | Inspections of equipment of licensees

Advise to the Minister on any matter relating to the electricity industry

The NER regulated the electricity industry for a little more than ten years, before it was replaced by the National Energy Regulator, which took over its functions. The National Energy Regulator is an independent regulator established in terms of the National Energy Regulator Act, 2004 (Act No. 40 of 2004). The National Energy Regulator regulates the electricity industry, the petroleum pipelines industry and the piped gas industry.

A clear legal framework for electricity regulation was established with the coming into operation of the Electricity Regulation Act of 2006.

3.1.3 Electricity regulatory experience

Electricity regulation is the “oldest” regulated industry in terms of the establishment of a separate regulatory body. The NER has done reasonably well, in view of the many obstacles that it had to overcome in terms of an unclear legal framework. The experience up to now regarding regulation is basically a copy of what many other countries in the world have experienced, namely:

Policy framework: Policy contradictions or policy gaps create important obstacles to effective regulation of the ESI by the National Energy Regulator (NERSA). For example uncertainty existed about government policy on where further investment should come from as generation capacity began to run out. The published policy is that Independent Power Producers (IPPs) should invest in the next power generation capacity. Eskom should not build the next power station. However, with the delay in the ESI reform process the framework to facilitate investments by other players is not yet in place. This situation creates a dilemma for the regulator and increases the likelihood as can be seen now that Eskom is called in to make new investments, thus undermining the policy aim of liberalization of the ESI. Investment by Eskom in further generation capacity will strengthen its market power and competitive edge against any new entrant. There is a concern in the ESI that the current policy position that Eskom should retain 70% of the market will make it difficult for new entrants to enter on a competitive basis. They will require substantial guarantees and protection in the face of a dominant incumbent, thus undermining the original intention of liberalisation. Continued dominance of one player will greatly increase the regulatory burden on the regulator.

In general a broader understanding is thus needed in spheres of Government of the regulatory compact, the distinction between regulatory policies and broader economic and industrial policy, and of the importance of the separate roles of the state as regulator, its role as owner of public enterprises and its role in making and implementing economic policy in the public interest.

Legal framework: The legal framework has not been clear for some time which made it difficult to regulate effectively and efficiently. However with the coming into operation of the National Energy Regulator Act, a clear legal framework has been established for the regulator.

Transparency: Transparency and public participation have been a challenge that the Regulator have not succeeded in yet, although good progress is made by the newly established National Energy Regulator (NERSA) in this regard, e.g. public meetings, written decisions.

Neutrality: The issue of non-discrimination was not emphasized during the reign of the NER; however, with the coming into being of the national energy regulator, non-discrimination is an important regulatory concept that is prevalent in the legislation.

Predictability and consistency: The NER's decisions have not adhered to this principle in most cases. For example its pricing decisions and the methodologies used to arrive at it has historically changed periodically with stakeholders not knowing the basis for decisions. It was only in 2003 that a methodology was published which provided some guidance to stakeholders as to how the NER will make its pricing decisions. NERSA is required to provide reasons, facts and evidence for their decisions which will set precedence for future decisions.

Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. NER was not an independent regulatory body in the true sense of the word, since appeals could be made to the Minister. The ESI has remained through the reign of the NER organized along its public monopoly lines and the NER was thus not faced with significantly contested decisions. This is likely to change with NERSA and as liberalisation proceeds. Statements by politicians about Eskom prices and that it will not be allowed to rise for example above inflation in the past or will rise by 15 to 18% at present, contradicts the independence of NERSA and have sent powerful signals to potential private sector investors in generation capacity about the relative independence of the regulatory regime. With the potential of private players entering the generation market, the regulatory system will thus have to demonstrate its robustness and integrity in order to reduce the regulatory risk new entrants would face.

Accountability: NERSA is accountable in terms of the law.

Resources: Underestimation of the capacity needed to create a functioning regulator. Regulation is a complex task, but the perception currently is that it is being viewed as "anyone can do the job". There is a general underestimation of the power of the regulated entity versus the regulator. This refers to the issue of information asymmetry. The regulator is funded via levies, which is a requirement for regulatory independence.

3.2 Snapshot of the South African gas industry

South Africa has had a domestic gas industry since 1966, when the then state-owned company Sasol began converting coal (the primary and ubiquitous energy source of South Africa) to Hydrogen rich gas. Sasol was one of the key energy companies established by Government as monopolies to provide strategic energy services to the state. Such strategic industries were established under the previous (pre-1994) regime to fulfil one of Government's main objectives, that is protection and defence against embargoes and sanctions by other nations opposed to apartheid.

Sasol was privatized in 1979 and exists, in effect, as a privately owned monopoly, with the state retaining a minority shareholding. No regulatory framework was established at this time. Outside of the synthetic fuels industry, the major use of gas is for cooking and some heating by domestic consumers and for various small to medium scale commercial uses in the Johannesburg area.

Sasol Gas dominates gas supply in South Africa. Sasol undertook a project to develop gas fields in Mozambique and pipe it to South Africa. This project by Sasol is backed up by a Regulatory agreement between Sasol and the South African government (and another between the government of South Africa, the government of Mozambique and Sasol). The former agreement is part of the Gas Act. This agreement is administered by NERSA. Gas represents approximately 2,5 % of the total primary energy supply in South Africa

Other players are PetroSA who converts offshore gas to liquid fuels, Egoli Gas that supplies industrial customers and domestic consumers in Johannesburg and is being supplied by Sasol Gas. The Sasol 2 and 3 plants produce methane rich gas, which is sold in the Witbank and Middelburg areas as well as KwaZulu Natal. Easigas supplies liquid petroleum gas in the Port Elizabeth area.

The development of gas as a major primary energy source is seen by Government in the 1998 white paper on energy as fitting well with its policies of energy diversification (away from just coal) and utilising cleaner, more environmentally friendly fuels.

Key policy challenges identified in the 1998 White paper on energy:

- | To ensure conditions conducive to a stable investment climate, so as to encourage economically viable development and thereby limit the risks to capital lenders and improve project viabilities;
- | To ensure that gas transmission, storage and distribution operators do not adopt monopolistic behaviour and to limit the opportunities for dominant operators to abuse their market power;
- | To deal effectively with the international aspects of gas transmission pipelines and international gas trade; and
- | To develop appropriate gas governance systems and the necessary capacity for these too operate.

3.2.1 Regulatory overview

The view with the establishment of a gas regulator was that the existing participants in the industry, potential participants and potential investors would all welcome a regulatory environment in which government policies for the gas industry are stated explicitly. It was stated in the energy white paper of 1998 that this will increase investor confidence and promote the rapid development of the industry.

In 1994, the RSA government took steps to establish sectoral and regulatory policies for the gas industry.

Before the Gas Act was brought into operation Cabinet decided that a single energy regulator would be established to regulate the electricity, piped-gas and petroleum pipelines industries. An energy regulator, as opposed to sector regulators, is the trend in international regulation. Among the advantages of this system is better coordination of regulation of the various sectors, which favours cross-sector projects such as gas-fired power stations. The National Energy Regulator came into operation during 2005.

Some of the new principles that came with the Gas Act related to non-discrimination with no cross-subsidisation, third party access and facilitation of competition.

3.2.2 Regulatory experience

There has not been much experience in gas regulation so far, since NERSA has been in operation for just over a year. However, a clear legal and regulatory framework exists which do provide certainty to all market players:

- | Policy framework: There is generally a clear policy framework with no overlapping jurisdictions. However there is one potential concern. The National Energy Regulator only regulates gas transmission and distribution and not reticulation. Municipalities regulate reticulation as per the Constitution. Confusion and the potential imposition of a different regulatory regime gives cause for concern, e.g. should an entity upgrade from reticulation to distribution. Suppliers of gas in municipal areas who have been given exclusivity to supply

consumers can have concerns over the potential loss of their larger scale customers (distribution) to suppliers who would not be regulated by the municipality, but by NERSA.

Legal framework: The coming into operation of the National Energy Regulator Act has established a clear legal framework for the regulator.

Transparency: Good progress is made by the newly established National Energy Regulator (NERSA) in this regard, i.e. holding public meetings where all stakeholders can be involved.

Neutrality: The issue of non-discrimination is an important regulatory concept that is prevalent in the legislation.

Predictability and consistency: The national energy regulator is required to provide reasons, facts and evidence for their decisions which sets precedence for future decisions.

Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. The legal framework provide for an independent regulator in the form of the National Energy Regulator

Accountability: The regulator is accountable in terms of the law.

Resources: The majority of the staff of the national energy regulator still needs development in terms of experience, skills and knowledge of the industry to assist and support the Regulator in executing their mandate. The regulator is funded via levies, which is a requirement for regulatory independence.

3.3 Snapshot of the South African petroleum pipelines industry

The focus will be on the petroleum pipelines industry and not the whole petroleum industry per se. Government's goal is to deregulate the petroleum industry in time. It will however keep on regulating petroleum pipelines, because of the natural monopoly elements inherent to this industry.

Petronet, a division of Transnet Holdings, dominates the petroleum pipelines industry. In the private sector, there are a number of offshore loading facilities (including the single buoy mooring through which 80% of South Africa's crude oil is imported) as well as storage facilities owned by the oil industry.

It is expected that with the new regulatory environment there will be more players and therefore the facilities must be regulated efficiently. Access to pipelines, loading facilities and storage facilities are key determinants of competition in the petroleum industry.

The first Petronet pipeline was built in the mid-1960s from Durban to Johannesburg and is known as the Durban-Johannesburg Pipeline (DJP). Since then other pipelines have been built and Petronet now transports about 40% of SA's petroleum and all of Natref's crude, a total of 16 billion litres a year. Approximately 80% of Johannesburg International Airport's requirements are supplied through the Avtur pipeline from Natref. Petronet has indicated that they possibly will replace the aging DJP with a new pipeline known as the New Multi-Product Pipeline (NMPP). It is expected that this project will most probably be completed by 2010. NERSA will have to approve the construction of such a new pipeline. Petroline is another company that has received a licence for construction of a pipeline recently from NERSA. This pipeline will run from Maputo to Nelspruit and then to Kendal and will be a competitor to Petronet

The pipelines and storage facilities currently used in South Africa consist of a combination of state owned (Petronet and Central Energy Fund) and private sector facilities, which have in effect not been independently regulated. In the case of pipelines, Petronet (a division of Transnet) has built, owned, operated and regulated

pipelines. However, government states in the Energy White Paper (1998) that it would like to separate the functions between, on the one hand, investment and operation and on the other hand, licensing and regulation of pipelines. The development of the Petroleum Pipelines Act of 2003 and the subsequent establishment of NERSA forms part of this separation process.

3.3.1 Regulatory experience

The National Energy Regulator has only been in existence for just over one year. Therefore, not much experience has been documented thus far. No further information exist at this time, safe to say that a clear legal and regulatory framework exist which provides the necessary tools for the Regulator to execute its mandate efficiently and effectively:

- | Policy framework: A clear policy framework exists. The previous arrangement where the DME effectively regulated the pipeline tariff has lead to conflict with respect to the opposing priorities of the DME, which seeks to keep prices to a minimum and the DPE (Petronet's official shareholder) which wants Petronet to maximise tariffs.
- | Legal framework: The coming into operation of the National Energy Regulator Act has established a clear legal framework for the regulator.
- | Transparency: Good progress is made by the newly established National Energy Regulator (NERSA) in this regard, i.e. holding public meetings where all stakeholders can be involved.
- | Neutrality: The issue of non-discrimination is an important regulatory concept that is prevalent in the legislation.
- | Predictability and consistency: The national energy regulator is required to provide reasons, facts and evidence for their decisions which sets precedence for future decisions.
- | Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. The legal framework provide for an independent regulator in the form of the National Energy Regulator
- | Accountability: The regulator is accountable in terms of the law.
- | Resources: The staff of the national energy regulator needs development in terms of experience, skills and knowledge of the industry to assist and support the Regulator in executing their mandate. The regulator is funded via levies, which is a requirement for regulatory independence.

3.4 A snapshot of the South African telecoms industry

The Telecoms industry consists of Telkom (one of the largest communications services providers on the African continent), the incumbent fixed line network operator in South Africa and Neotel, the second national operator. Government is the majority shareholder in Telkom. The mobile market has been liberalised since 1994 and three network operators are currently licensed, namely Vodacom, of which the incumbent Telkom holds a 50% share, MTN and Cell C. At the end of March 2005 the mobile industry represented a market penetration of 48% (22 million subscribers). Transtel (a wholly-owned subsidiary of Transnet) and Eskom Enterprises (a wholly-owned subsidiary of Eskom) are two private telecommunications network operators. There are also a number of internet service providers. Sentech was established in 1992 as the signal distributor under the auspices of the SABC. Sentech was subsequently split from the SABC and became a public company in 1996. It was awarded two licences, an international gateway licence and a multi-media licence. The international gateway licence has

allowed Sentech to become a “carrier-of-carriers” transporting international voice traffic to and from operators in South Africa. Sentech is 100% government-owned.

The South African information and communication technology (ICT) environment comprises active public and private participation. Entities involved here are the State Information Technology Agency (SITA), the department of Science and Technology, Gautengonline, Cape It Initiative (CITI). The South African IT market is the largest on the African continent and the printer market has grown significantly. There are a large number of players involved in the internet arena.

The Department of Public Enterprises has set up a state-owned broadband company, Infraco (government has a 74% share in Infraco).

Government's share in the telecoms industry is as follows:

- | Telkom – 38%
- | Sentech – 100%
- | Neotel – 30% through Eskom and Transnet/Transtel
- | Infraco – 74%

3.4.1 Regulatory overview

Since its inception in July 2000, the Independent Communications Authority of South Africa (ICASA) has been the official regulator for the communications and broadcasting sectors. With a mandate from Government, ICASA is governed by four key statutes, namely the ICASA Act of 2000, the Independent Broadcasting Act of 1993, the Broadcasting Act of 1999 and the Telecommunications Authority Act, 103 of 1996.

ICASA's key functions included regulating players in the communications sector; issuing operating licences to service providers; managing the frequency spectrum in South Africa and protecting consumers against unfair business practices.

A bill amending the ICASA Act, 13 of 2000 passed by Parliament became effective on July 19, 2006. The ICASA Act amendments and the Electronic Communications Act, 36 of 2005, redefine and expand the powers of ICASA to control the communications market. The main provisions of the ICASA Act amendments are the removal of the power of the Minister to approve regulations made by ICASA, the increased power of ICASA to conduct enquiries and to enforce its rulings, and the establishment of a Complaints and Compliance Committee to assist ICASA in hearings and making findings on complaints and allegations of non-compliance with the Electronic Communications Act.

In March 2005, the Minister of Communications tabled a Convergence Bill in Parliament to establish the legal framework for convergence in the broadcasting, broadcasting signal distribution and communications sectors that repealed the Telecommunications Act.

All existing licences are to remain in force until converted to new licences in line with the new licensing regime. The regulations made under the Telecommunications Act are due to remain in force until required new regulations are in place to fully implement the provisions of the Electronic Communications Act.

The Electronic Communications Act aims to stimulate competition; and will have an impact on price controls, terms and conditions of access, interconnection and facilities leasing. Fair pricing across the fixed-line, mobile and

Internet streams is expected to raise the levels of telecom service uptake. This Act also aims to change the market structure from a vertically integrated, infrastructure based market structure, to a horizontal service based technology neutral market structure with a number of separate licences being issued for different areas. The Act clarifies the roles of ICASA and the Minister of Communications in policy development, licensing and regulations. The main aspects addressed by the Electronic Communications Act are the:

- | Policy making powers of the Minister of Communications;
- | Regulation making, licensing and radio frequency spectrum control powers of ICASA;
- | Licensing framework for communications and broadcasting services;
- | Power of ICASA to intervene where special market conditions exist, such as significant market power or essential facilities;
- | Obligations of licencees to interconnect and lease communications facilities, and the powers of ICASA to enforce such obligations; and.
- | Transitional provisions to address the conversion of existing licences to the new licences envisioned in the Electronic Communications Act.

The Universal Service Agency (USA) established in terms of the 1996 Telecommunications Act had to administer the Universal Service Fund, of which the main purpose was to subsidise service to needy people and network extension into under-serviced areas. The fact that this Agency is not part of ICASA basically removes universal service from the heart of regulation. Co-ordination of the efforts of the regulator and the USA has proven to be difficult. (Teljeur, et al. 2003)

3.4.2 Regulatory experience

Prior to the Electronic Communications Act ICASA has found it difficult to regulate effectively, mainly because of the overlapping roles in terms of the legislation. The Electronic Communications Act clears up the roles and responsibilities and generally provides for a stronger role and greater independence for ICASA. A strong regulator is essential for effective competition, especially in this market where liberalisation is still in progress.

- | Policy framework: The recent establishment of Infracore under the Department of Public enterprises and not the Department of Communications, which should naturally have the competence to oversee the development, has been a concern (Business Day, 20 March 2007). Government retains a big share in this industry and the question could be raised as to why government is set on driving the telecommunications sector both as a policy maker, shareholder and regulator (although ICASA is supposed to be independent)? There is a general view that government is standing in the way of ICASA to proceed in liberalising the fields of broadcasting and telecommunications as per the Electronic Communications Act. This hinders the continuation of the process and gives rise to general uncertainty as to “who is actually the regulator”.
- | Legal framework: The coming into operation of the Electronic Communications Act established a clear legal framework for the regulator and clarifies the roles and responsibilities of the different role-players, which gave rise to uncertainty under previous legislation.
- | Transparency: The ICASA Act leaves it to the discretion of the councillors as to whether a meeting should be open to the public whereas in the NERSA Act all meetings must be open to the public.
- | Neutrality: The issue of non-discrimination is an important regulatory concept that is prevalent in the legislation.

Predictability and consistency: ICASA is required to provide reasons for its decisions which will set precedence for future decisions.

Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. A major constraint on the regulator's independence in the past was the requirement in the then legislation that regulations prescribed by it, must be approved by the Minister. This has allowed Ministers to withhold or delay regulations that were critical to the opening up of the sector and regulating it more effectively as intended by the Act, but which were perceived not to be in the particular interests of Telkom during its various stages of restructuring. There was also a dual role by the Minister and ICASA over licensing of major operators. The view amongst many stakeholders were that the interference and efforts to compromise regulatory independence stem from the state's dual role as policy maker for the sector and majority shareholder in the de facto monopoly incumbent. The later Electronic Communications Act only came into operation in 2006, which is an attempt to rectify these constraints on the regulator's independence.

Accountability: The regulator is accountable in terms of the law.

Resources: ICASA also suffers an acute lack of financial and human resources (Teljeur et al. 2003). The statutory financial ties to the Department of Communications do little to enhance regulatory independence. Human resources in terms of expertise, skills, experience and the right remuneration packages are a hindrance towards effective and efficient regulation.

3.5 Snapshot of the South African water industry

Water services refer to water supply and sanitation services and include regional water schemes, local water schemes, on-site sanitation and the collection and treatment of wastewater. All 46 million people living in South Africa use domestic water services of some kind. However, it is estimated that some 7 million people (15%) do not have access to adequate water services and some 18 million people (38%) do not have adequate sanitation services. Water and wastewater services are also essential for businesses and industries and efficient provision of these services can help to promote economic growth and the eradication of poverty.

The main organisations currently involved in water services are the following:

The Department of Water Affairs and Forestry is responsible for policy and regulation of the sector and also currently operates water resource infrastructure (such as dams), bulk water supply schemes and some retail infrastructure (providing services directly to consumers).

Government-owned water boards currently operate water resource infrastructure, bulk portable water supply schemes (selling to municipalities and industries), some retail water infrastructure and some wastewater systems.

Municipalities operate some local water resource infrastructure (such as dams and boreholes) and bulk water supply schemes, supply water and sanitation to the retail consumer (households, businesses and industries) and operate wastewater collection and treatment systems.

Community-based organisations run small water schemes in rural areas.

Publicly or privately owned companies provide services in terms of contracts with government or municipalities. Johannesburg Water is a water utility wholly owned by the City of Johannesburg. The direct involvement of privately owned companies in the operation of water services in South Africa has been limited to date.

Government's objectives for water services include:

- | Improving access to, and affordability and reliability of, water and sanitation services for both households and firms; with a special focus on sustainable access to safe and adequate clean water and sanitation for the poor;
- | Improving governance of sector institutions;
- | Mobilising government funds to focus on the pressing needs of the poor and increasing other investments by reducing risks associated with private sector financing;
- | Building effective institutions and developing skills and knowledge for the effective and efficient operation of water and sanitation services; and
- | Promoting community and user involvement in infrastructure construction, maintenance and management, especially in poor urban and rural areas, as part of establishing developmental local government.

The Water Services Act 108 of 1997 made important policy advances specifically with respect to the institutional framework. The free basic water policy represents a further policy development within broad municipal and intergovernmental policy towards the goal of access to basic water services by all. Water resources policies have been fundamentally overhauled subsequent to the 1994 White Paper, as reflected in the White Paper on a National Water Policy for South Africa (April 1997) and the National Water Act 36 of 1998. A White Paper on Basic Household Sanitation (referred to hereafter as the Sanitation White Paper) was published in 2001 and extends the sanitation-related policies in the 1994 White Paper. The White Paper on Municipal Service Partnerships (April 2000) sets out policies and procedures for engaging with public and private agencies. These extend the policies embedded in the Water Services Act.

Free basic services policies are intended to ensure that all households enjoy at least a basic level of service. The equitable share has been increased significantly to support this objective. In relation to sanitation, municipalities need to adopt a flexible approach in assessing what level of services they can afford to subsidise. Government's priority is to ensure that the needs of the vast number of people who do not even have a basic level of service are served first, before considering a subsidy for those who already have a high level of service.

It is stated in the policy paper that in terms of the government's policy of inflation targeting, it is desirable to maintain tariff increases below the rate of inflation.

3.5.1 Regulatory overview

In light of both the objectives and principles of regulation set out above, the key things to be regulated in the water services sector are the following:

- | Access to services: Are appropriate investments being made to extend services to the poor?
- | Technical standards. Are minimum technical standards being met?
- | Quality of service: Are water services provided in a reliable manner? Is the quality of water adequate? Are consumers able to exercise their rights?
- | Pricing: Are water services appropriately priced so as to ensure the affordability of basic services but also to promote economic and environmental objectives and to ensure the financial viability of water services providers?
- | Investments. Do investment decisions take into account the long-term implications for sustainability?
- | Efficiency of service. Are water services provided efficiently?

Within the framework of the Constitution, national government is the overall regulator of the sector. This regulatory role takes four primary forms:

- | The setting of national norms and standards, including the specification of certain planning requirements and the regulation of tariffs;
- | The regulation of water services authorities in terms of these norms and standards;
- | The regulation of contracts between water services authorities and water services providers; and
- | The direct regulation of organs of state (for example, government-owned and controlled water boards).

Currently, the national regulatory function lies with the Minister of Water Affairs and Forestry and is exercised through DWAF. Many stakeholders have expressed the view that an independent regulator would be preferable. However, in the short to medium term, there are no plans to take the regulatory function out of DWAF but rather to develop the function within DWAF. In the longer term the possibility of an independent regulator outside government should be reconsidered.

Water regulation is undertaken exclusively by Government – regulatory powers are divided across a three tier structure:

- | 1st tier regulation – RSA government continues to regulate raw water extraction e.g. from dams and rivers. The Minister of Water Affairs and Forestry sets a tariff strategy which all other regulating bodies must adhere to – tariff strategy is agreed through public consultation.
- | 2nd tier regulation – Water Boards regulate bulk water supply to the municipalities (raw or treated).
- | 3^d tier regulation – Local authorities regulate 'purified water supply' – under the Constitution local authorities are responsible for providing water and overseeing quantity and quality.

3.5.2 Experience up to now

As mentioned above there are a number of entities involved in the economic regulation of water. There is no particular independent water regulator, regulation is basically done by the ministry of water affairs and forestry and then by water boards and local authorities, where the players actually also become the referees.

- | Policy framework: A policy of increasing devolution, from central, to local government, of regulatory powers is being pursued e.g. Water Services Authorities are being set up – these will combine the regulatory responsibilities of local authorities and the Water Boards. There is currently a lack of and a need to strengthen and improve co-ordination between government departments involved in the provision of water services.
- | Legal framework: The Minister of Water Affairs and Forestry has the power to establish and disestablish water boards. The Minister is responsible for the regulation of water boards, including economic and financial regulation in terms of the Public Finance Management Act. In terms of the Water Services Act, water boards are also required to enter into contracts with water services authorities and other water services providers to whom they provide services. There is also a need to improve economic regulation by defining the economic regulatory framework more clearly, including the regulation of pricing and the level of debt, as well as monitoring the impact of secondary activities on the finances and risk profile of water boards. Self-regulation is mostly in the order of the day, that is, the same institution both sets the tariff level and regulates the tariff level.
- | Transparency: Water charges differ across South Africa. DWAF is required to gazette a pricing strategy from time to time within which various role-players can then determine water charges. It is unlikely that final charges

are for example cost-reflective, if one look at the large number of links in the water supply chain that are regulated in different ways and by different entities. Regulatory incentives for cost reductions and for efficient prices are weak at all levels of the activity chain. The absence of an independent regulator is problematic with highly opaque regulatory relationships currently in place.

Neutrality: This concept is not touched on per se as part of the regulatory framework.

Predictability and consistency: There is not a specific requirement for decision-making and how it should be done to provide for predictability and consistency.

Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. The regulator is a ministry and therefore no independent water regulator exists. The experience has been one of confusion; it is a complex industry to understand, especially taking into account all the role-players.

Accountability: There are reporting requirements in terms of the Water Act but there is a need to distinguish between the accountability arrangements for water boards to national government as "owners" on the one hand and through contractual obligations with other water services institutions on the other.

Resources: Human resources in terms of expertise, skills and experience are a concern.

3.6 Snapshot of the transport industry

The transport infrastructure includes roads, railways, airports, harbours, pipelines, interchange facilities and the associated dedicated power and communications systems. The following is a short description of the main players in the industry relating to those where economic regulation is of relevance currently:

National Department of Transport: The department is responsible for policy-making and creation of legislation and provides funding for infrastructure development. The Minister of Transport, working through cabinet retains the final authority over transport strategy.

Department of Public Enterprises: This department is responsible for Transnet (the largest transport infrastructure and service provider) and is the sole shareholder. DPE is tasked with monitoring the performance of Transnet and is the lead department in issues of restructuring of state owned enterprises and privatization and concessioning processes.

Transnet: Transnet Limited originated in the South African Railways and Harbour administration of the early 1900s and the subsequent South African Transport Services and was ultimately incorporated as Transnet in 1990. Transnet operates and controls significant parts of South Africa's transport infrastructure and is active in transport operations outside of South Africa, mainly in Africa. The South African transport industry is dominated by the parastatal Transnet. The divisions of Transnet are the National Ports Authority, South African Ports Operations, Spoornet, Petronet, Proteckon and Transwerk. Of these divisions only Spoornet and the ports will be covered since it is more inclined towards economic regulation. Petronet has been covered under the energy sector above.

Spoornet manages most of South Africa's rail infrastructure. Spoornet's freight operations are composed of a general freight business, a heavy haul export coal line and a heavy haul iron ore export line. The network connects the ports and hinterland of South Africa and the rail networks of the sub-Saharan region. Spoornet operates the long-distance passenger transport service Shosholoza Meyl and the luxury Blue Train. Railway operations are critical to South Africa's economy, carrying 59 per cent of total freight

transport volumes. The rail sector has been declining, because of the increased competition with road haulage. It is argued that the playing fields are not level since road transport does not meet the full costs of utilising road infrastructure. Spoornet is the largest division of Transnet.

The *South African Port Operations* (SAPO) manages 15 cargo terminal operations, situated across six South African ports. As the dominant terminal operator in each of these ports, SAPO interfaces with road and rail transport to provide a service to a wide spectrum of customers, including shipping lines and cargo owners. There are concerns about bottlenecks at the ports handling container traffic. It is costly for ships to have to wait to dock and these costs add considerably to the cost of trade with South Africa. It should be noted that all shipping is in private hands and theoretically South Africa operates an open port system. Portnet is highly profitable and cross-subsidise the other divisions of Transnet. There is a concern that Portnet has been under-spending on capital owing to its need to cross-subsidise the other divisions.

The *National Ports Authority of South Africa* (NPA) is the largest port authority on the continent and it owns and manages South Africa's ports at Richards Bay, Durban, East London, Port Elizabeth, Mossel Bay, Cape Town, Saldanha and Ngqura. NPA plays a pivotal role in international trade by providing suitable infrastructure as a conduit for the country's imports and exports. As port landlord, NPA is responsible for developing and managing the port properties:

- Developing port strategies, advising and implementing national port policies;
- Providing and maintaining port infrastructure (i.e. breakwaters, seawalls, channels, basins, quay walls and jetties), and the sustainability of ports and their environments; and
- Co-ordinating marketing and promotional activities for each port.

In addition, NPA performs a control function, which includes:

- The provision of vessel traffic control and navigational aids;
- Licensing and leasing of terminals to operators;
- Monitoring the performance of port operators; and
- Ensuring the orderly, efficient and reliable transfer of cargo and passengers between sea and land.

Aviation: The Airports Company of South Africa (ACSA) provides airport infrastructure and facilities. This is a partially privatised state-owned enterprise, established in 1993, of which the majority shareholder is the NDOT as represented by the minister of transport. The Air Traffic and Navigation Services Company (ATNS) provide air traffic, navigation and associated services. ATNS is a state-owned enterprise, also established in 1993, which operates on a commercial basis and whose sole shareholder is the NDOT as represented by the minister of Transport.

The transport industry plays a significant role in the social and economic development of any country and the Government has recognized transport as one of the priority areas for socio-economic development.

The main policy statements by Government in the national white paper on transport are:

- Establishment of a co-ordinating structure to optimize resource usage as well as the transport infrastructure system.
- Maintain and develop the transportation infrastructure system and prioritise its development in terms of needs. This entails a more sustainable approach to the provision of transport infrastructure.

Foster a sound financial base for transportation infrastructure and this can include where appropriate investment by the private sector. Attention will be given to seeking and developing new sources for financing of transport infrastructure.

Promotion of a strong, diverse, efficient and competitive industry, including the separation of ownership and regulation where appropriate. Regulatory structures will be established, where they are appropriate but do not exist. Infrastructure will be regulated where monopoly situations could occur.

Promotion of environmental protection and resource conservation.

Enhance the quality of life of all citizens of South Africa

Advance human resource development in the provision of transportation infrastructure

3.6.1 Regulatory overview

There is a general lack of economic regulation in the transport industry. Petroleum pipelines are regulated by the National Energy Regulator and have been discussed under the energy sector. The National Ports Act has been operationalised and an independent ports regulator is in a developmental stage.

The most advanced form of economic regulation is found in the aviation sector where a part-time regulatory body exists.

Both ACSA and ATNS are economically regulated by a Regulating Committee, which is appointed by the Minister of Transport. The charges for access to this infrastructure and services provided are thus regulated to prevent abuse of dominance or monopolistic rents.

Traffic rights and licences are allocated by the International Air Services Council (IASC) according to bilateral agreements negotiated by the NDOT. The IASC which was also established in 1993 is appointed by the Minister of Transport and responsible for the licensing and control of international air service operations and licence holders, it is thus more focused on access regulation.

ATNS and ACSA are prevented by law from involvement in air transport service provision, although DPE is, via its ownership of South African Airways.

3.6.2 Transport regulatory experience

The RC with regard to Aviation is mainly a ministerial agency.

Policy framework: Combined roles of the Minister of Transport as shareholder of the regulated entities and as the person responsible for appointing the Regulating committee. Concurrency of jurisdiction with competition authorities provides scope for forum-shopping.

Legal framework: A legal framework does exist which basically established a ministerial agency to regulate the aviation sector.

Transparency: There is no particular requirement for public meetings in terms of the legal framework.

Neutrality: This concept is not touched on per se as part of the regulatory framework and some stakeholders have complained that the Regulating Committee is more lenient towards the regulated entities in setting tariffs for example.

Predictability and consistency: There is not a specific requirement for decision-making and how it should be done to provide for predictability and consistency.

Independence of the regulator from the regulated companies and government is a prerequisite for any sound regulatory system. The Regulating Committee is not independent. It needs Ministerial approval for its decisions, the Minister of Transport appoints the members, the budget is derived from NDOT and it is dependant on NDOT for administrative support. There is also a lack of proper appeal procedures. There is thus a large scope for ministerial discretion which is generally not advisable particularly in this situation where the minister of transport is also the shareholder of the regulated entities.

Accountability: There are reporting requirements in terms of the Act.

Resources: The RC's part-time nature and small size results in a lack of human capacity and skills required to oversee this complex industry.

In terms of port infrastructure Transnet has up to now controlled both the infrastructure (NPA) and operations (SAPO), and through its shareholding structure the state, are thus both player and referee. Cross-subsidisation largely funded by port revenue creates distortions and places an undue burden on exporters. An independent regulator has been established in terms of the National Ports Act. It does appear however that in terms of the National Ports Act the Minister will still play a role in the regulatory environment, which may give rise to uncertainty regarding role clarity.

In terms of Rail infrastructure there is a lack of regulatory control over consumer prices which is a concern.

3.7 Competition Authority

The Competition Commission (CC) was set-up in September 1999 under the Competition Act of 1998. The CC's predecessor, the Competition Board, was not considered to have sufficient independence and power. It was reportedly the case that the real decision making power actually rested with the Minister. Establishment of the CC was seen as a major step forward in implementing the 1998 Competition Act and also to give competition regulation much needed 'teeth'. The 1998 Competition Act (as amended twice) is not based on other Competition Acts world-wide e.g. UK, EC and Canada. There are three levels of Competition structure (independent of each other):

Competitions Appeals Court (highest authority)

Competition Tribunal

Competition Commission

The Competition Commission (CC) is headed by the Competition Commissioner and two deputies who meet to make final decisions.

The Department of Trade and Industry appoints the CC Board, although independence is seen to be well developed as decisions are rarely affected. The CC is funded 50% by Government and 50% by fees charged for its services.

The Competition Act, which came into force on 1 September 1999, creates an institutional framework for the regulation of mergers and the regulation of anticompetitive behaviour. Competition authorities and regulatory agencies can co-exist under various conditions, depending on their jurisdiction and mandate.

Regulation is implemented as a substitute for competitive forces (e.g. a price cap) whereas competition law is aimed at protecting and enhancing the competitive process (which will drive prices down) and to set boundaries for acceptable business conduct.

An important distinction between the methods used by regulatory agencies and those used by competition authorities is that of the timing of the intervention. Regulation is usually proactive and consists of legislation, regulations, rules, directives and terms and conditions of licences, all of which are aimed at preventing harmful business practices. These rules are determined in advance and will pertain to situations that may arise in the future. By contrast, competition law, with the exception of merger control, is applied retrospectively by the competition authorities only once a concern in this respect is raised or identified.

The Competition Act was changed through the 2nd amendment which enables the Competition Commission to exercise regulatory power over the various utility sectors, where previously it had none.

The 2nd amendment obliges the Competition Commission to enter into official agreements with each of the utility regulators to agree how regulatory powers will be split between them and how the actual competition promotion/enforcement/monitoring workload will be distributed between the Competition Commission and the regulators.

4. Regulatory effectiveness

Looking at the experience with utility regulation in South Africa, the first impression is that the National Energy Regulator has the best chance of working effectively and efficiently and the main reason is the clear legal and regulatory framework within which this organisation can operate. It also provides for credibility in the eyes of investors and legitimacy in the eyes of consumers, because of the principles of the rule of law, transparency, independence, predictability and consistency and accountability that it conforms to.

However, the two main factors that might be an obstacle in the National Energy Regulator becoming a world class regulator is the human resource capability that have to support the Regulator in executing its mandate and also interference by government. As is the case in the developing and the developed world regulatory capacity is an important factor to take into account when the regulatory entity is designed and established.

Contradictory policy views can give rise to uncertainty by stakeholders as to how independent the regulator really is. In establishing an independent regulator, the legal framework consists of “checks and balances” which should immediately raise a “red flag” if the regulator is not performing efficiently and effectively. It is necessary that the regulator is trusted to execute its mandate.

Although ICASA has a clear legal framework now which clears up much of the overlapping roles and responsibilities which made its work almost impossible previously, i.e. to be an independent regulator, there is still a lot of uncertainty amongst stakeholders regarding government’s persistence in “wanting” it seems to play a dominant role in the telecommunications sector.

The main weaknesses across regulators:

- | Lack of policy coherence
- | Piecemeal development of regulation on a sector-by-sector basis.
- | Lack of / limited regulatory independence.
- | Suboptimal co-ordination of concurrent jurisdiction between sector regulators and the competition commission/other governmental departments.
- | Lack of understanding of the role of government departments following the establishment of independent regulatory bodies.
- | Underestimation of the required institutional capacity (within a regulatory body, but also more widely in terms of government, industry and customers)
- | Weakness in terms of internal governance models of regulators.
- | High staff turnover in government and regulatory institutions.
- | Customers do not understand their rights.

It thus appears in essence that in order to institutionalise the kind of exceptional performance of a regulator, generally more attention must be paid to:

- | The design of the institutional structure surrounding regulation
- | The culture of regulation
- | The criteria and methods for making regulatory and regulatory staff appointments and developing staff.

5. Discussion

None of the industries discussed earlier are exactly alike in their economic characteristics, but they have important elements in common. In particular, they each combine naturally monopolistic activities, i.e. the network elements and potentially competitive activities, i.e. the provision of services over the network.

Kirkpatrick (2001) quoted a DFID (2000b:9-10) report stating: "Growth is essential for poverty reduction...Growth will depend on a continuation of market-based policies which promote investment in the context of low inflation and effective macro-economic management....The primary source of pro-poor growth will be the private sector, and particularly poor people themselves.... It is important for the state to create a legal and regulatory framework for private sector enterprise and to maintain a commitment to pro-poor economic reform." Effective regulation is therefore necessary for sector development and pro-poor growth. To be able to deduce whether regulation is effective, it is necessary to look at the benefits and costs associated with it.

Restructuring of state-owned enterprises have been on the agenda for some years. The perception through reading policy papers, the written media and listening to government is that despite written policy there is not a common consistent understanding/agreement across Government and between Government and the SOEs. This common consistent understanding/agreement is important so that it is clear and evident why restructuring is necessary in the first place, to assess again the capacity requirements and to assess how it will meet national objectives.

It has been shown internationally that restructuring has been less successful when the differing roles of the state overlap significantly. This indicates that the separation of the roles of those tasked with formulating overall state policy, with regulation and with the restructuring process needs to be re-established again.

Currently, it appears as though different role players are progressing in their own direction without really coordinating efforts to ensure that everyone is still on the same "road". The restructuring of the electricity distribution industry is for example a case in point here.

One of the prerequisites for the success of a given infrastructure restructuring and privatization project is the establishment of a sound regulatory framework which is tailored to the needs of the sector and the country concerned. Putting legislation in place to establish regulatory institutions is only the beginning. The impact of regulation is determined by the way the regulator translates the legal objectives into operating rules, with the aim of bringing about investment, efficiency and service quality. It is apparent that economic regulation is not only an art and a game, but also a balancing act between setting of efficient prices, keeping service quality and reliability as a priority and promoting investments. It is therefore a complex task as can be seen through experiences around the globe (developing and developed world).

Except for the National Electricity Regulator (NER), that became part of the National Energy Regulator (NERSA) economic regulators have not been around very long to allow for a definitive assessment of their effectiveness and impact on industry performance. However, an examination and analysis is necessary not only of the regulatory institutions and policies, but also of the politics of regulation and competition. Independent regulators in South Africa generally require an intensive form of regulation, e.g. access, tariffs, non-discrimination. It requires a consistent adjustment of the behaviour of the operator who is in turn responding to anti-competitive incentives in

the system. Also, regulation needs to be flexible when confronted with a dynamic market. Globalisation and the liberalisation of the telecommunications market for example pose specific challenges to the regulator as technological innovations spread rapidly across country borders, continuously changing the relevant geographical and product markets. Looking at how scares regulatory resources are in general it is necessary to rethink and reconsider whether a global trend is not followed perhaps that might be a bit too complex at this stage and should the focus not rather be on getting the basics right first, e.g. establishing first what does government want to achieve in creating a regulatory entity? Currently it appears as though an independent regulator is in some cases created for the sake of it (or perhaps to follow international trends), and not really for what it can achieve. On the other hand, given the prevalence of residual natural monopolies in SOE sectors and the size of SOEs in relation to potential local competitors in South Africa, Government should assure all stakeholders that restructuring will lead not only to competition, but also to an appropriate degree of regulation. There is a need for debate around these issues amongst different stakeholders.

Global experience shows that the sequence of reforms is important. Countries have gone about reform in many different ways and their experiences can be valuable. It is important to take stock of why and how did South African policies develop. Policy transfer from developed to developing countries has not always been successful because the differences in for example culture, market realities and political values have not always been taken into account. What is the role of policy transfer especially looking at the applicability to the specific context within the country. How has the issue of policy transfer been handled in other developing and transition economies and what can be learned from it.

The form of regulation is also an important element. Regulatory systems both internal and external to government appear to be weak in general. Why is this the case? There are a number of opinions, e.g. not a clear legal mandate, inadequate human and financial capacity, government interference. How can this be rectified and what are the alternatives? The water industry is an example of a regulated industry that is not clear in terms of the way it is economically regulated. Water, like electricity, is a service which is essential to social and economic development; its social importance necessarily involves a financial cost. A lot can be learned from the restructuring of water industries globally. The water sector has globally been the last industry to be restructured and privatized.

A reassessment should be contemplated regarding regulatory failure relative to market failure. Regulatory failure arises from a combination of the information problems facing regulators and the complex relationships inherent in the control structure of every regulatory setting. Regulatory failure is exacerbated by a lack of technical and economic expertise in critical areas and here it will be a revelation to complete an assessment of:

- | The goals of each regulator – looking not only at the economic, but also at the social and pro-poor goals
- | The institutional context – political, economic and cultural values that sustain or frustrate the regulation, likelihood of maintaining regulatory independence in the face of the forces for regulatory and political capture in a country and the extent of regulatory commitment, leading onto an assessment of regulatory credibility.
- | Information asymmetries and their significance for regulatory procedures and processes
- | The scope for effective competition – to assist in defining the need for regulation and the relevant forms it should take.

Regulation thus is supposed to be a means to an end. The end is better sector performance. In general does the regulatory system (governance and substance) move one closer to or further from targeted sector outcomes.

The question that can be asked is whether the regulation of markets actually increases economic welfare as was the intention when the different regulatory institutions were set up? An effective institutional structure is a necessary condition for effective regulation, but not a sufficient one. Regulatory success requires a proactive approach in implementing the regulatory mandate. Proactive, rather than passive regulation can lead the way in shaping regulation to achieve policy objectives in changing market conditions. Currently South African regulators tend to be rather passive in their approach, i.e. waiting for things to happen, or for entities to approach them, rather than actively and passionately implementing their mandates.

Regarding government's pro-poor objectives a big challenge is universal access to essential infrastructure. Growth and development depends on a smooth supply of water, gas, electricity, telecommunication, transport services. Initiatives in this regard are mostly driven by government and are not really seen as part of the mandate of regulators. Why is this the case? What is the role and limitations of regulation in poverty alleviation? Regulators should be able to play a much more meaningful role in assisting government to implement its pro-poor policies. Co-ordination and monitoring of efforts by various role-players will be a good start.

One of the reasons for creating an independent economic regulator is the need to create an environment that will promote investment. The role of economic regulation in the development of economic infrastructure such as telecommunications, ports, airports, water and energy supplies can not be underestimated. An effective and efficient independent economic regulator can create a more certain environment for investment which can lead to more orderly economic development. Has an environment been created that will promote investment? Do the South African economic regulators have credibility and legitimacy in the eyes of customers and potential investors? It does not appear to be the case currently. What is missing? What has been the experience elsewhere? What have been done wrong and what can be done to create efficient and effective regulatory institutions.

Moving on to the link between economic regulation and competition policy and how it is currently dealt with? What lessons can be learned from experiences elsewhere in this regard? The competition authority and regulatory bodies co-exist. An unambiguous demarcation of duties and a set mandate for co-operation should preferably be embedded in the legislation governing the bodies in question.

Competition in the utility industries need to be seen not as a substitute for regulation but as a valuable tool of regulation that in many circumstances could be the most effective vehicle for achieving both efficiency and social policy objectives. Competition should be seen and used by regulators as a valuable asset that strengthens regulation, not as a threat or problem. Yet, keeping the door for entry open and barriers to entry minimised would require vigilant monitoring and periodic regulatory intervention.

Policy formulation, policy coherence and the relationship with regulation are important concepts in establishing an effective regulatory environment. Experience around the world indicates that it is better to separate responsibilities for policy-making and regulation. The reasons pertain to prevention of collusion, reduction of potential for conflict of interests within government departments, improvement of transparency, reduction of arbitrariness of decision-making and to the concentration of expertise and competence in each area, which lead to more efficient governance. The institutional context is critical to the processes and outcomes of any regulatory regime. This context should clearly set out the legal and regulatory framework but should then trust the regulator to continue with implementing its mandate. Checks and balances should be part of the framework to ensure that a regulator is not a "lose canon".

A lack of policy coherence can create uncertainty which can impact on the effectiveness and efficiency of a regulator. Research should focus on current legislation and internationally recognised regulatory principles, overlap of government departmental jurisdictions, application of legislation, the position of regulators vis-à-vis state monopolies, typical regulatory structures and the consequences of regulatory failure.

Policy co-ordination and coherence is an issue that can be drawn across all the public utility infrastructure industries. Different national government departments are involved in these industries and also in some cases different spheres of government (e.g. national, provincial and local) and then also the regulator for each industry. No visible overarching structures currently exist to co-ordinate the various entities involved with the same industry to ensure some policy coherence and coordination of efforts and understanding.

A clear, unambiguous and stable legal framework is a pre-requisite for attracting investment. Such a framework reduces uncertainty and risk for potential investors. Investors are sensitive to any form of risk and since these industries require significant upfront investments and long lead times, it is important to reduce any political, legal and regulatory risk.

Also important is the fact that experiences in other countries can be used as a guide, but the actual circumstances of South Africa should determine how its policies, institutional arrangements and regulatory frameworks are established. Factors to take into account will typically be the size and maturity of the specific industry, endowment of resources, and characteristics of the country.

Currently there appears to be role confusion currently which potentially limits the effectiveness of this governance system. There also appears to be a lack of trust. At the level of regulatory institutions, 'trust is at the heart of regulation'. Once established, regulators must be seen as competent, reasonable and credible while at the same time trusting regulatory targets to exercise self-restraint and to accept public interest values.

What are the considerations in determining the form of a regulator? Sometimes transitional regulatory systems are needed because a country may be unable to implement the independent regulator model because of a lack of capacity, commitment, or both. It is unrealistic to expect that the requisite capacity and commitment will appear overnight when little or no prior experience exist with autonomous regulation and when there is not enough trust in entity that it will execute its functions effectively and efficiently.

The emphasis on technical expertise in sector-specific regulatory agencies can lead to an underestimation of economic or competition principles and of the need to meet Government's broader socio-economic, developmental and environmental objectives. Regulatory interventions can have the undesirable effect of limiting innovation and investment or even of reducing competition by creating distortions in the market place. Conflict between the optimal technical solution and the optimal competitive solution to a certain problem is a possibility and further challenges are technological innovation, which is difficult, if not impossible, to predict. In all of these sectors a challenge exists regarding human capacity in the area of regulatory governance. (Teljeur et al 2003)

The nature and scale of producer and consumer representation in regulatory matters and processes are an important consideration, since should there be a lack of participation the whole purpose for the regulator (to balance interests) will be in jeopardy. How are regulators ensuring that all market participants are included in the regulatory processes? Transparency and participation typically leads to credibility and legitimacy of regulators.

6. Recommendations

It is recommended that based on all the issues discussed in this document a programme of robust debate and research across sectors on cross-cutting and sector-specific issues be considered that covers the following:

6.1 Research topics

1. Research paper on the principles that must form the foundation of economic regulation of public utilities and which should aim towards greater regulatory coherence, taking sector specific needs and lessons from international experience into account.
2. Government has not found a definite solution to its multiple roles as shareholder and policymaker, or reconciled this with the state's decisions to allocate economic regulatory functions to an independent regulator. Current role confusion potentially limits the effectiveness of this governance system. A Regulator needs to have a clear and unambiguous mandate in order to fulfil it effectively. The regulator also needs to be provided with the tools to fulfil its mandate. This can entail a per sector analysis of the multiple roles of different entities and recommendations on how the roles can be ring-fenced practically.
3. Government's seemingly indecisiveness on certain policy issues, e.g. investment in electricity generation infrastructure has created significant uncertainty. For a number of years the message was perceived as been that Eskom will not build the next power station; that an independent power producer will build it, because of the drive towards competition. This has not succeeded and has led to an electricity capacity shortage problem. What has the actual scenario been here and what lessons can be learned from this to prevent it from happening in the future?
4. The role of economic regulation in 'access to essential facilities'. There is a role for economic regulators to play from an economic growth and development point of view to facilitate access to certain essential services to all consumers, regardless of their income status. This requires regulatory intervention to promote equitable outcomes. Currently, the view is in many instances that this is not part of the mandates of economic regulators. Clearly an economic regulator must have some role on the "affordable" side at least and implementing government's policies in that regard. The view is that basic services are not optimally supplied currently and there is a need to establish what role regulators can play to assist government in this regard.
5. Identification of strategies to strengthen economic regulation. A big focus here is to increase the resources available to the regulator, especially focusing on human capacity issues, training and technical assistance programmes to build capacity and to assist in learning from the experience of other regulators.
6. The lack of regulatory control over the railways gives rise to concern. In order to address the lack of efficiency in rail tariff determination, some form of regulatory oversight is required. How has this sector been dealt with in other countries? The development of common principles in the approach to regulation in the transport sector should be at the foundation of this move towards greater regulatory coherence, taking sector specific needs and lessons from international experience into account.
7. Diversity of regulatory approaches is a feature of the current scenario in South Africa as illustrated by the different policy choices regarding market structure, price determination, social objectives and regulatory design. This is not necessarily wrong as long as the basis for the differences is clear and understandable.

8. An overarching study, researching all the essential public utilities, institutional and regulatory frameworks, the regulatory principles under which they have been created, the legal and regulatory frameworks, the issues that are blocking them from achieving their mandates/helping them achieving their mandates, the alternatives.
9. Privatization/liberalisation is not the cure for any regulatory problem. It can in actual fact exacerbate problems if it is not carefully planned and executed. The key requirement is for effective regulatory institutions and powers to be in place to ensure that privatization and liberalization can be made to work.
 - a Incumbent dominance represents a formidable barrier to entry in the utilities; firm, expert and clearly independent regulatory intervention will be essential to overcome this disincentive to competition. The importance of effective regulation will be especially great where there is a continuing government ownership interest in the sector in question;
 - b Competition in network industries requires access to essential network facilities to be available on equal terms to all industry participants. Effective regulation of network access is essential if this is to be achieved.
 - c The achievement of core social objectives such as the provision of universal service at an affordable price is likely to be put at risk unless there is appropriate regulatory intervention, which in turn need to reflect clearly articulated and published government policy.
10. Restructuring and liberalisation are and has been on the table in a few of these industries for some time now. How has the process developed, what has changed from the initial concepts, what has caused the changes, why does progress seem so slow? What are possible solutions if needed?

6.2 Issues to debate

Debates on issues such as the following are necessary:

- | Is there a congruent view as to a regulator's role amongst government and other stakeholders?
- | Credibility and legitimacy of regulators? Why are regulators not as effective and efficient as everyone would have hoped? Or is this assumption not correct?
- | Views around the roles, relationships and responsibilities of different role players.
- | Role of regulatory impact assessments.
- | The role for local government in economic regulation. Currently local government is involved in water regulation, where they are in essence perceived to be both player and referee.
- | What are the limitations for involvement of customers and consumers in regulatory processes? Is it happening? If not, what are the limitations?
- | The role of powerful SOEs vs. new regulators and the potential for form-shopping if a SOE does not obtain the decision from the regulator that it wants.
- | Jurisdictional issues between a regulator and the Competition Commission. What is the experience currently and what is the optimal relationship?
- | The distinction between industries according to their envisaged trajectory or phase of development. In other words, is it a "transition" industry aiming at competitive conditions, or is it an industry that is judged to be most efficiently operated by a single provider with strict regulation? It appears as though written policy does not always concur with the spoken word, which creates uncertainty.

6.3 Capacity-building programme

The requisite skills and experience for effective and efficient economic regulation are lacking currently in South Africa. What can be done about this and what have been done in other countries in the region, developing countries that had the same challenge?

6.4 Forward-looking research

- | Economic regulation of some industries, e.g. the water sector, is not clear. Currently this whole industry and how it is governed is opaque. Currently there are no thoughts regarding creation of an independent economic regulator. What are the global trends in regulation of the water sector and which of those trends can be taken note of in the South African context. A ports regulator is in the process of being created and the rail sector is not regulated in an economic sense at all. Research on what has happened in these sectors globally and how regulators have typically being designed to perform optimally will be useful, especially in light of the eminent development of these institutions.
- | The role of local government in economic regulation, is there a role and in which industries.
- | It is not necessarily the case that the poorest will loose out from privatization, but low-income consumers may not benefit unless their specific needs are addressed. Can economic regulation play a role here?

7. Conclusion

It is not always recognized that economic regulation is a complex task. Economic regulatory (consisting of regulatory governance and the regulatory substance) capacity is limited in South Africa, especially in view of new legislation and the creation of independent regulators. Current research, debates and capacity-building efforts on the subject are fragmented and although useful do not appear to lead to an overall improvement in regulatory related concepts. There is a need to improve the economic regulatory climate in South Africa and it can only be done by a coherent programme covering all the perceived shortcomings.

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