

From State to Market and Back Again: South Africa's Power Sector Reforms

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In South Africa the “standard model” of restructuring was seriously considered but later rejected. This paper identifies the main drivers of reform, chronologically describes the reform process, examines the interests of different stakeholders, and summarizes the outcomes of reform. The conclusion reflects on the reasons why the state is once again playing a leading role in the power sector in South Africa and other developing countries.

1. Introduction

The experience of power sector reform in South Africa represents an interesting case where the “standard model” of unbundling, competition and privatization was seriously considered but later rejected. Indeed the South African government initially decided to unbundled the dominant state utility, Eskom, and commissioned consultants to design an electricity market with a power exchange complemented by a market for bilateral contracts and financial hedges. It was also envisaged that part of Eskom would be sold and that the private sector would be responsible for new investments in generation capacity. However, none of the reforms have been adopted and the government has re-affirmed the lead-role of Eskom in further development of the sector. There will be no real competition and the private sector will be relegated to the margins of the industry in the form of limited bidding for new Independent Power Production (IPPs).

Actual reforms in South Africa have focused on improving commercial performance and governance relationships through corporatisation, shareholder performance-contracts, improved board governance and management, and through independent regulation. Considerable attention has also been given to electrification. Although these reforms have had considerable success – Eskom’s technical and financial performance is reasonably good, and large gains have been made in improving access to electricity – considerable problems and challenges remain in ensuring improved investment performance. And inefficiencies in the distribution industry are increasingly evident in power outages and rising prices. The pressures for further reform remain.

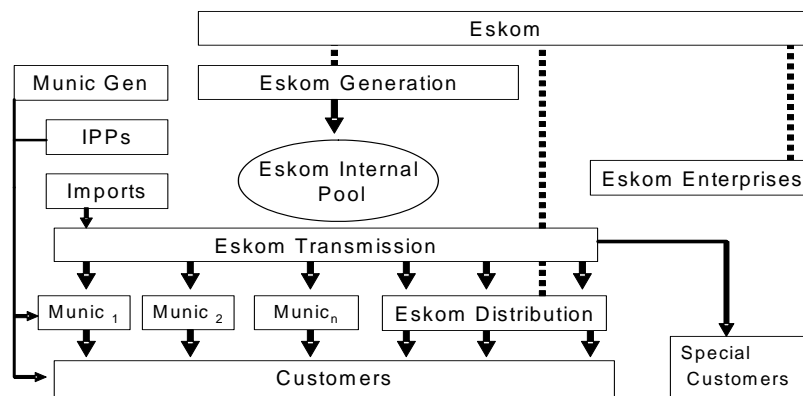
In this paper, we first describe the key features of the power sector in South Africa and identify the main drivers for reform. The bulk of the paper is a section that focuses on the reforms themselves. The discussion is broken down into key, broadly chronological, episodes where the rationale for reform, the interests of the different stakeholders, the reform models and the outcomes of reform are analyzed. The concluding section reflects on the nature and direction of the reforms and some of the reasons why the state is once again playing a lead role in the power sector in developing countries.

2. Overview of the electricity industry

The South African Electricity Supply Industry (ESI) remains dominated by the state-owned and vertically integrated utility, Eskom, which ranks ninth in the world in terms of electricity sales [Eskom Annual Report 2003]. With capacity of 40GW out of a total system capacity of 43GW, Eskom generates about 96% of South Africa's electricity requirements, which amounts to more than half the electricity generated on the African continent. Private generators contribute about 3% of national output and municipalities contribute an additional 1%. South Africa's electricity infrastructure is heavily dependent on coal (93%) with nuclear, bagasse, hydro and emergency gas turbines accounting for the rest.

Eskom also owns and controls the high voltage transmission grid and supplies about half of electricity directly to customers. The remainder of electricity distribution is undertaken by about 188 local authorities. They buy bulk-supplies of 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 (see Figure 1).

Figure 1: Structure of the electricity supply industry in South Africa



Existing industry structure

Source: Author's Research.

South Africa is largely self-sufficient in electricity production. Eskom imports some power from the Democratic Republic of Congo and from Zambia, mainly for peak load management, and is contractually bound to take electricity from a hydro plant in Mozambique. However, the country also sells electricity to neighbouring countries (Botswana, Lesotho, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe) representing less than 5% of total net energy produced.

Direct electricity sales to mines, industrial customers and municipalities accounted for 77% of Eskom's revenue and 83% of its electricity sales in 2003. Eskom also operates retail distribution services for 3.5 million customers and an additional 4 million customers are serviced by the municipal distributors.²

Eskom average tariffs cover its average costs of 2 US cents/kWh.³ In 2003, industrial customers paid an average of 2.2 US cents/kWh while residential customers paid a far higher 5.6 US cents/kWh. However, tariffs for rural and low-income residential customers are cross-subsidised from industrial tariffs and Eskom surpluses earned on sales to municipalities. The large municipalities, in turn, make an additional profit from reselling Eskom electricity, which enables them to subsidise property rates and to finance other municipal services. Municipalities' dependence on this profit has been an obstacle to distribution reform. This benefit is limited by non-payment of tariffs by a substantial proportion of low-income consumers, inefficient operations and lack of technical and managerial capacity.

Eskom has led an impressive national electrification drive. The proportion of households with access to electricity has risen from below 40% in 1993, to nearly 70% in 2003. In the years 1994-2002, 3.8 million new households received electricity. About two-thirds of these connections were accomplished by Eskom and the remainder by local-authorities. The electrification programme has resulted in significant increases in peak demand in the morning and early evenings with profound implications for future generation plant mix. The need for demand-side management programmes is also becoming more apparent.

3. Toward Electricity Reform: South Africa's Unique Context

Eskom was, and continues to be, a relatively well-functioning public utility. Unlike many other developing countries, which suffer from serious operational inefficiencies, Eskom delivers reasonably reliable and quality power at low prices, and is financially viable. Moreover, largely due to Eskom, South Africa has not experienced capacity shortfalls. The nation has a well developed bond market, and Eskom is able to raise private capital from both local and international investors to finance expansion.

Thus the two main factors that have driven electricity reform in much of the rest of the developing world – poor utility performance and short-term financial needs – are not particularly evident in South Africa. The country's larger macroeconomic stability and the absence of a heavy debt burden remove the third reform driver – the need for privatization receipts to alleviate public debt – that has been particularly relevant in Latin America. A fourth driver, the global intellectual momentum behind privatization and competition as organizing principles for the electricity industry, has had limited and late impact in South Africa, as described further below.

Instead at least three South African specific drivers have contributed to electricity reform in South Africa. First, and perhaps most important, the democratic revolution in 1994

focused attention on poorly performing service delivery departments and, in particular, on the dramatically unequal access to electricity of white and black populations. As in other sectors, the need to redress past wrongs in electricity access and service provision was high on the new government's agenda.

Second, in the mid-1990s government economic policy sought to improve efficiencies in state-owned enterprises (SOEs). Although Eskom was generally regarded as being better managed than other SOEs, there was a new focus on governance reform and the corporatisation of these entities through re-defining the relationship of the state as shareholder, clarifying tax obligations, putting in place performance contracts and establishing independent regulatory authorities.

Third, in the context of a new comprehensive energy policy in the mid to late 1990s, the new international thinking on the electricity industry was applied to an assessment of Eskom's past investment and risk management performance [Business Map 2001]. This debate opened doors to more fundamental reform and restructuring of South Africa's electricity sector.

The net result of these effects was that through the second half of the 1990s, South Africa embarked on a reform of its electricity system. The reform was broadly separated into a reform of the Electricity *Distribution* Industry (EDI) and Electricity *Supply* Industry (ESI).

4. EDI Reform: Meeting the needs of consumers

At the beginning of the 1990s the twin problems of overriding political concern were the financial problems of the electricity municipal distributors and the low levels of access to electricity. Small, poorly-run municipal distributors are the legacy of the apartheid era and the creation of separate local black municipalities. These municipalities struggle with lack of technical capacity, a paucity of income-generating industrial customers, and a huge back-log in new connections for low-income consumers. Already some of these smaller distributors have been amalgamated into larger entities, but most of them still lack viability. Non-payment from customers has compounded the problem of accumulating debts to Eskom (the supplier of bulk power). Many distributors have also curtailed spending on essential maintenance needed to assure security and reliability of supply.

For the same customer categories, tariffs vary widely between distributors. It has proved impossible to regulate more than 175 distribution entities effectively. Reporting has been inadequate and it has been difficult to obtain accurate costs information. Given all these problems and uncertainties, it has also been difficult to attract and retain skilled, motivated and adequately paid employees and managers in the industry [Media briefing by Minister of Minerals and Energy 2001; Department of Minerals and Energy 2001].

Political attention to the problems of distributors has grown because distributors in the poorest areas have been unable to finance new connections and subsidize services to poor

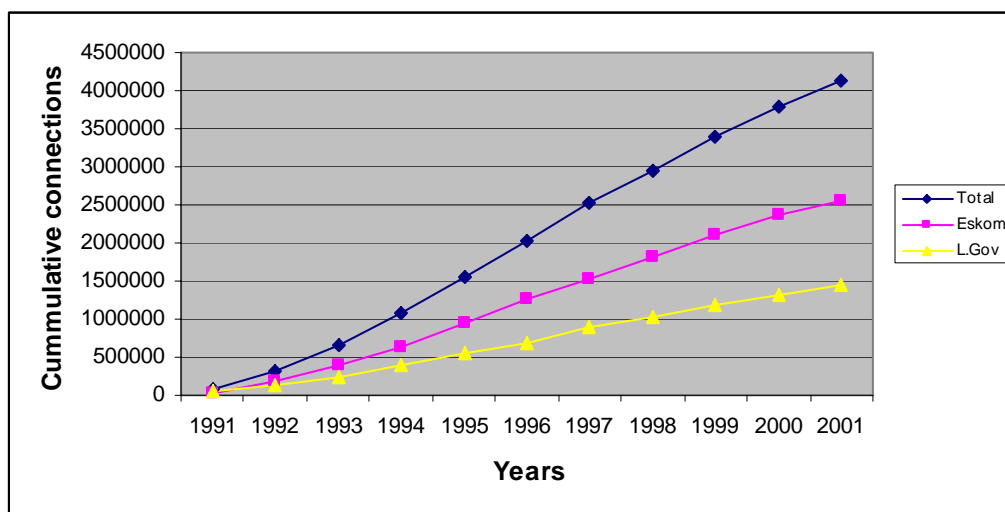
customers. EDI reform was intended to address these related challenges of jump-starting rural electrification, and restructuring distributors.

4.1 An accelerated national electrification programme

By contrast with most other developing countries, urban and rural electrification was near the top of the electricity reform agenda due to the political context of South Africa's transition to apartheid. With the exception of some studies⁴ [Eberhard 1984] in the 1980s that highlighted the inequity of electricity provision, little data existed documenting the demand from un-served households. Nearly all white South Africans, including remote farms, had electricity connections; few black households had access. Some researchers began to map out what a national electrification programme might look like and argued that it would be important to restructure the inefficient distribution industry [Dingley 1990; Theron, Eberhard & Dingley 1992]. The changes in the political landscape in South Africa, after 1990, lent some urgency to these calls for action.

The African National Congress's 1994 election platform, the Reconstruction and Development Programme, set out the goal of electrifying 2.5 million new homes between 1994 and 1999, a goal that was exceeded by the new democratically elected government [African National Congress 1994] (see Figure 2).

Figure 2: Cumulative electricity connections 1991-2001



Source: National Electricity Regulator 2001a; National Electricity Regulator 2001b.

Until year 2000, the entire electrification programme was funded by Eskom, either through internal subsidies (garnered mainly from higher-than-cost electricity charges to large industrial and mining customers), or through transfers to an electrification fund that the National Electricity Regulator allocated to municipalities.

Since the mid 1990s it has been national policy that a portion of the capital cost of connections should be subsidized [Department of Minerals and Energy 1998: 37]. In practice, the subsidy has extended to the entire cost of connection as well as a portion of the operating costs. Actual consumption of electricity in low-income homes has been much lower than forecast—thus revenues from electrification have also fallen short of plan. At the beginning of the programme it was estimated that the average monthly consumption of newly connected, low-income households would be 350 kilowatt hours per month (compared with an average of 750 kilowatt hours per month for a middle-income family in South Africa). However, actual average monthly consumption has been less than a third of these estimates. Government has now decided to grant 50 kWh per month free to poor consumers.

Nearly all of these new connections have used pre-payment technology – customers buy tokens or top-up electronic cards to activate their electricity dispenser. The costs of the electricity supply and use were to be recovered through a flat energy unit charge. Many connections involve informal houses (shacks) and use pre-wired “ready boards” – typically with a few lights and plug points.

As government begins to reform the power sector, it has moved to secure the national electrification programme through establishing a separate National Electrification Fund in the Department of Minerals and Energy funded by National Treasury. Eskom now pays taxes and has stated that it will no longer subsidize the electrification programme from internal income.

This experience is important as it demonstrates that the meeting of social goals and public benefits can be independent of industry structure. Electrification was carried out by the old vertically-integrated, publicly-owned utility, Eskom, and by local government distributors. The electrification programme has continued, despite moves to reform the electricity market in South Africa.

The electrification programme in South Africa is remarkable in a number of respects. Doubling access to electricity from one third to two-thirds of the population in a matter of years is probably without international precedent. The programme was clearly driven by the unique challenges that South Africa faced in overcoming the legacy of apartheid inequity. Yet there are lessons from this programme that have more universal relevance. The South African experience demonstrates that it is possible to make substantial progress in widening access to electricity services for the poor, even as electricity industries are restructured. Although Eskom has not yet been unbundled or privatized, it has faced pressures to operate on a sound commercial basis, and has discontinued internal subsidies for new electricity connections. The electrification programme was driven by the advent of democracy and a political commitment to provide services for the poor. It was made possible by an electricity industry that was technically competent and financially strong. And it has been put on a sustainable basis through explicit policy and regulatory instruments that will give expression to government’s social goals, even when the electricity industry is unbundled and possibly privatized. The lesson from South Africa appears to be that the most important variable for the success of public benefit programmes

is not industry structure or ownership form, but rather the existence or not of explicit public policies, regulatory instruments, dedicated implementing institutions and funding to achieve desired social goals.

4.2 Restructuring the Electricity Distributors

Critical to the task of an accelerated electrification programme was restructuring electricity distributors. Attention to distributors was not always welcomed by the large metropolitan governments who had gained surplus income from the sale of electricity and feared loss of that revenue; the South African Local Government Association (SALGA) and the Association of Municipal Electrical Undertakings (AMEU) has been ambivalent in their support for the need for rationalization. Eskom was an early supporter of EDI restructuring in principle, although in practice it has often resisted reforms that would strip it of its distribution services [Eskom 1990]. The unions, on the other hand, have strongly advocated distribution reforms that would create one single, publicly-owned national distributor.

After a protracted period, involving a number of studies, a stakeholder forum, government committees and negotiations, the Cabinet agreed in June 1999 that the large number of municipal distributors and Eskom's distribution business should be merged into six Regional Electricity Distribution (RED) companies.

REDs would be defined to as to ensure the financial viability of each, but the central problem was drawing the boundaries. To be financially viable, each RED would require the right balance of below-cost (low-income residential) and above-cost (commercial and industrial) users. In early 2000 Government appointed a consortium, led by consultants PriceWaterhouseCoopers (PwC), to examine and provide recommendations on the RED's boundaries, ownership, asset valuation, and regulation and human resources. Government's Electricity Distribution Industry Restructuring Committee (EDRIC)—comprising relevant government departments, Eskom, local government and the NER—oversaw the process and produced its own “Blueprint for EDI Reform” [Department of Minerals and Energy 2001]. Cabinet's review led to a decision—in January 2001 and reconfirmed in May—to adopt EDRIC's blueprint and rationalize distribution into six Regional Electricity Distributors (REDs), with an EDI Holdings Company to manage the transition. However, Cabinet also recommended further consultation.

Elements of local government have remained ambivalent or hostile to the proposal and have threatened to challenge the plan in the Constitutional Court. The ruling African National Congress has been split on the matter—ANC's leadership asserts the importance of a national solution to the problems of electricity distribution, but those involved at local government fear losing their influence.

While conflicting interests have slowed the reform process, it is also probably true to say that one of the original reasons for reform (viz. the need to strengthen the capability of distributors to extend access to electricity to the majority of the population) was obviated

by Eskom simply getting on with the job. However, the other reasons for distribution reform are beginning to receive more public attention: local government finances are in a parlous state and industry is now greatly concerned with the lack of investment and the deterioration of system reliability. These concerns around the quality and reliability of supply are likely to re-ignite moves to restructure the industry.

EDI reform is, therefore, still a work in progress. The President, in his State of the Nation Address to Parliament in 2004, set June 2005 as a target date for the establishment of the first RED. However, that target is unlikely to be met. Major differences between the various stakeholders remain unresolved and government seems unwilling to face the reality that the creation of the REDs will almost certainly require a constitutional amendment that limits the role of local government in electricity distribution.

5. Reforming the governance, structure and competitiveness of the ESI

In parallel to EDI reform, pressure was building for more fundamental restructuring of the electricity supply industry and Eskom in particular.

These pressures took four forms. First, in 1995, the government established an independent regulatory commission, a stage-setting event for the reform efforts that followed. Second, South Africa, in the 1990s, underwent a process of macro- and micro- economic reform which included moves to improve governance in large state-owned enterprises such as Eskom, in part through corporatisation. Third, a closer scrutiny of Eskom's own performance suggested that some degree of restructuring could lead to performance improvements, particularly in investment decisions. Finally, the idea of private participation in the ESI and a shift toward competition, albeit tied to the larger South African reality of a post-apartheid nation, gradually gained currency.

5.1 A New Electricity Regulator

In 1995, the government decided to clarify its multiple roles in relation to the Electricity Supply Industry. Government owns much of the electricity supply industry and has expectations of adequate financial performance and returns. It also has a responsibility for protecting consumers and ensuring that electricity services are provided at as low a cost as possible. Following a global trend, it created an independent regulator to take responsibility for the latter functions. The National Electricity Regulator (NER) was founded with a legal mandate to license *all* electricity suppliers, to approve their tariffs, monitor the quality of supply and settle disputes.

Many of the initial staff in the NER were ex-Eskom employees. Over time—and three boards of directors—NER has built its own staff and emerged as one of the more capable independent regulatory institutions in the African continent and its mandate has been extended to include also gas and petroleum pipelines. The NER has developed professional capacity in rate-of-return regulation and will be introducing incentive-based regulation in coming years. Its tariff determinations have consistently been below those applied for by

Eskom and the municipalities, while still allowing these utilities an economic rate-of-return. Nevertheless the NER still faces huge challenges in terms of building sufficient capacity to ensure further efficiency improvements by Eskom and the many municipal distributors. Indeed, the creation of new, stable and competent institutions in developing countries and emerging economies is a formidable task, particularly when there is little tradition and experience of independent regulation.

5.2 State Owned Enterprise Restructuring and the corporatisation of Eskom

South African has not been subject to any direct World Bank or IMF structural adjustment programs. Nevertheless in the mid-1990s, the government adopted a process of “self-imposed structural adjustment”. Following a period of attention to macro-economic reforms, the emphasis moved to micro-economic reforms, including a new focus on improved efficiencies and governance in government-owned entities. In August of 2000, the Department of Public Enterprises (DPE) published “A Policy Framework: An Accelerated Agenda towards the Restructuring of State Owned Enterprises”. Because of union pressure and also concerns in its own political constituency, government was been careful to avoid the P word (privatization) and described its restructuring agenda very broadly as follows:

“...Government’s policy with regard to State Owned Enterprises is more properly referred to as a *restructuring* programme, and not in the more simplistic terms of privatization. The programme was ... designed to ensure the maximization of shareholder interests defined in economic, social and development terms. Thus restructuring refers to the matrix of options that include the redesign of business management principles within enterprises, the attraction of strategic equity partnerships, the divestment of equity either in whole or in part where appropriate, and the employment of various immediate, turnaround initiatives.”

Government decided to focus its restructuring efforts on the four largest SOEs, one of which was Eskom [Media release by the Minister of Public Enterprises 2000]. Although created through statute, Eskom’s ownership status had never been formally defined. It paid no taxes and there was no formally- expressed set of performance expectations or obligations. Government wished to clarify its relationship with the utility and to formalize a performance contract.

In the words of the DPE policy document published in 2000:

- “Eskom will be corporatized, with transmission, distribution and generation each forming a separate corporate entity.
- Different generating companies will be formed to promote internal competition prior to the introduction of private sector participation in generation, in conjunction with new power requirements.”

The report thus understood the importance of not simply privatizing a monopoly, but creating a competitive industry structure before privatisation. The report also suggests that Transmission would probably remain in the hands of the state and that it is likely to take the form of a separate independent company.

The Eskom Conversion Act of 2001 replaced the old Eskom Act of 1987 and subsequent amendments. There was strong opposition to this bill from organized labor. It argued that government had not followed the procedures agreed in the National Framework Agreement (NFA) whereby representatives of government and unions would negotiate the restructuring of individual SOEs. In May and June 2001, Cosatu made a submission on the Eskom Conversion Bill to the Public Enterprise Parliamentary Portfolio Committee. Its opposition centered on three main concerns: the Bill would pave the way for the privatization of Eskom; taxation of Eskom would impinge on its developmental role; and taxation would result in upward pressure on electricity prices. Agreement was reached in principle that new clauses would be included in the Bill regarding the developmental role of Eskom and the protection of employees. However, they did not win the argument about Eskom paying taxes and dividends [Tinto 2002].⁵

5.3 Investment in the ESI: a re-evaluation of Eskom's performance

Within South Africa and internationally, Eskom is widely perceived to be a well functioning public utility. However, based on a closer look, there appears to be considerable scope for improvement, particularly in Eskom's investment decisions.

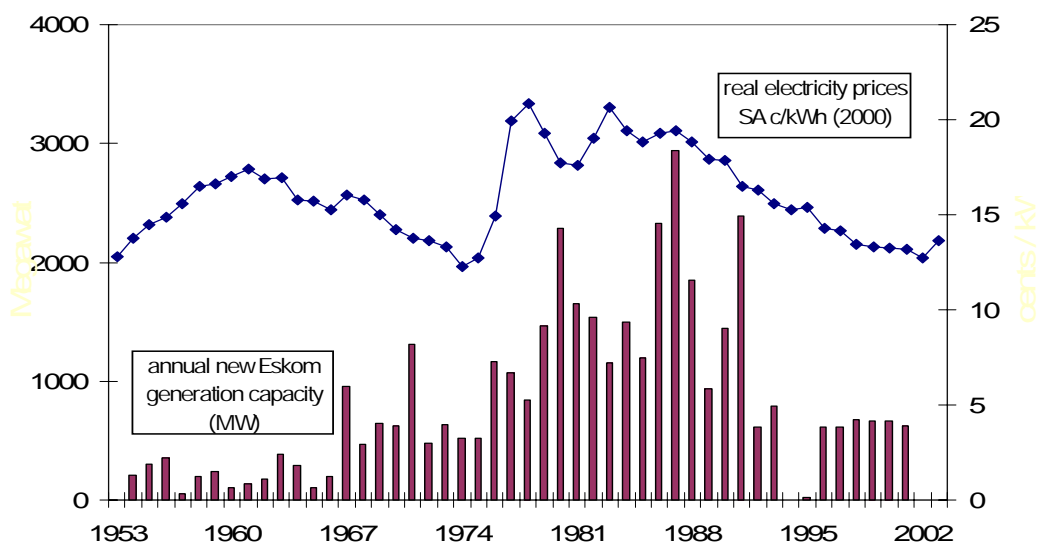
At first glance, Eskom does indeed appear to have performed well. It supplies electricity at amongst the lowest prices in the world. The average cost of electricity generated is around 1.5 US cent/kWh. In recent years, it has consistently made a positive return on assets. Reliability and quality of supply are good. Average energy availability⁶ from its power stations has increased from 76% in 1991 to 92% in 2000. Labour productivity has increased and employee numbers have dropped from over 66 000 in 1985, to 46 600 in 1991, to 32 800 in 2000. The national electricity utility is now commercially run with no recourse to the national fiscus. It raises finance through commercial debt, mostly through issuing bonds which are well supported by local and international capital markets. Government no longer provides guarantees for Eskom's debt [Eskom Annual Reports, Various Years].

Eskom's recent low prices and exemplary electrification performance have left the impression that it is highly efficient and that there is no need for reform. Many would simply equate low prices with high efficiency. However, this is not necessarily the case. There may be specific factors that account for low Eskom prices compared to other international utilities and there may be little hard evidence of superior efficiency [Steyn 2001; Davis & Steyn 1998; Eberhard and Mtepa 2003: 77-102].

A close examination of the South African ESI shows that low prices and the ability to fund electrification have emanated, in part, from very low coal prices (by international

standards) and, until recently, exemption from taxation and dividends [Steyn 2000; Eberhard and Mtepa 2003]. Nevertheless, if long-term price trends are examined, it will be noted that, in real terms, prices today are no lower than in the early 1950s or 1970s. This would seem to indicate that Eskom has not improved its performance as much as would have been hoped.

Figure 3: Eskom electricity price and capacity expansion 1950-2000

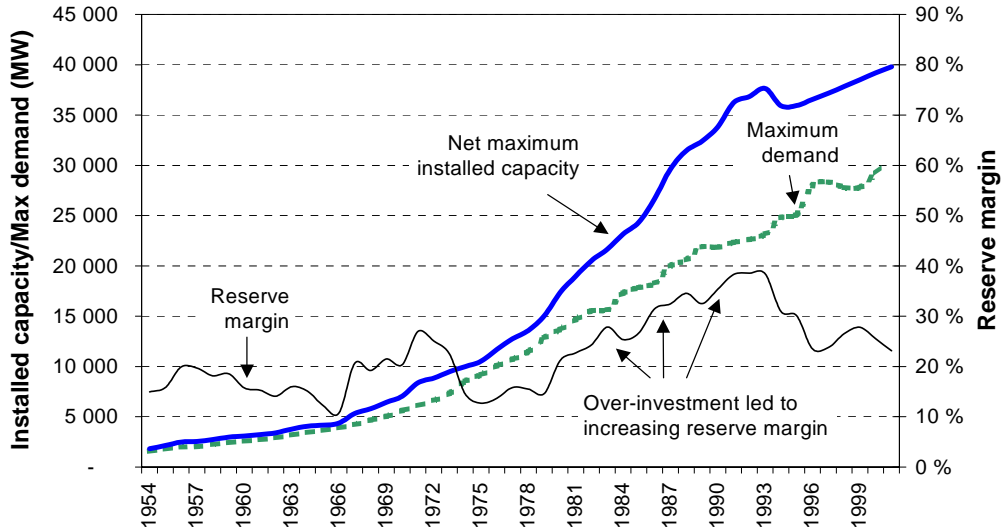


Source: Eskom Annual Reports: 1980-2002; Eskom Statistical Yearbooks 1985-1996.

Prices in the late 1970s and early 1980s rose steeply because Eskom invested massively in new generation capacity. However, its investment decisions were poor, resulting in expensive excesses in capacity (See Figure 3 & 4).

This pattern of overinvestment and subsequent contraction was not dissimilar to that experienced by many vertically-integrated power company monopolies during the 1970s and 1980s. When economic growth was forecast to be rapid, shortages in power supply seemed imminent and vast, new expansion projects would be undertaken, mostly within a context of investors or SOE managers assuming little risk, as the costs would be passed through to electricity consumers and debt was guaranteed by the state. But the investments were lumpy and had long lead-times. Expected growth rates were often not realized and the inevitable consequence was wasteful overcapacity. Planning of new plants and further investment would then stop until a new potential crisis in meeting future demand would arise.

Figure 4: Historical growth in maximum demand and capacity at Eskom

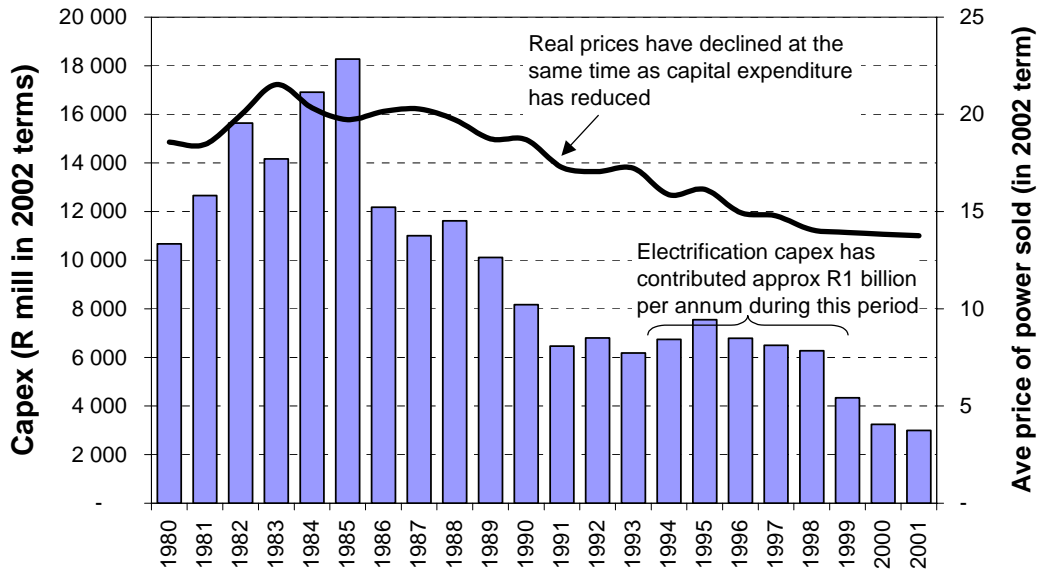


Source: Eskom Annual Reports: 1980-2002; Eskom Statistical Yearbooks 1985-1996.

Low Eskom prices today stem primarily from the fact that consumers have largely amortised the debt which funded the large investment programme of the 1980s that has provided the generation capacity currently still being used. Eskom has not had to invest significantly in new generation capacity for some years and the largest contribution to lower overall costs (and prices) has been lower debt and financing costs. Eskom's debt to equity ratio has fallen from 2.93 in 1986 to 0.09 in 2003 [Eskom Annual Reports, Various Years].

This analysis on Eskom's investment record is not widely shared in South Africa. Most equate low prices with efficient performance. Few recall the debacle of Eskom in the late 1970s and early 1980s, the high price hikes, and the criticisms of Eskom's governance and management. Few understand the consequences of the massive over-investment. Tariff reductions in the 1990s have erased memories;⁷ the overall standing and image of Eskom in the 1990s is much improved (see Figure 5). However, Eskom is now keen to see prices rise to levels that can support the new investment that is now necessary. Gradually more stakeholders are beginning to understand that current prices are economically unsustainable [Econ 2002].

Figure 5: Eskom capital expenditure and price trends (SA rands/cents)



Source: Econ 2002.

Eskom’s Integrated Strategic Electricity Plan suggests that by 2025 total maximum demand is likely to rise to around 55 GW, nearly double the current maximum. New peaking capacity might be needed on line as soon as 2007—perhaps earlier—and additional base load capacity is probably necessary by 2011. Options being considered are demand-side management, re-commissioning the mothballed coal-fired stations, gas turbines, pumped storage and new coal-fired power stations. Important investment decisions will have to be made soon. The primary policy challenge is to design an industry structure that provides the incentives to optimise investment efficiencies in the future [National Electricity Regulator 2004].

5.4 A paradigm shift: towards competition in electricity and energy policy

In the mid and late 1990s two further developments impacted on power sector reform. One was the articulation of a new energy policy—including electricity policy—and the other was the “black empowerment” movement that aimed to privatize into the hands of black business leaders a portion of state-owned enterprises, of which Eskom is the crown jewel.

A new energy policy emerged from the process culminating in a Cabinet approved White Paper on Energy Policy released in December 1998. This new policy framework was consistent with the government’s macroeconomic policy in that it emphasized the need to attract private investment into the energy sector and to promote efficiency through competition. It was a sharp break from the earlier apartheid-era energy policy, which was informed by two main threads: the provision of low-cost energy supplies to power mining and primary industry; and energy security for the apartheid state. The policy processes during this period were characterized by excessive secrecy which made rational and public

debate on energy policy impossible. The needs of those who most lacked adequate energy supplies were ignored. The shift to a new energy policy was supported by three developments: first, the intellectual development (mainly through an ANC sympathetic research group) of a new paradigm with emphasis on the “three E’s” (economic efficiency, social equity and environmental sustainability); second, the political process of legitimizing the new paradigm (though public consultation and publication of a White Paper); and, third, its structural realization in the economy and society – such as the shift in funding to the national electrification programme [Marquard and Eberhard 2000: 3-7; Eberhard and van Horen 1995].

While not all aspects of the White Paper have been implemented, it has become the reference point for policy in the sector. The overall policy objectives were seen to be improvements in social equity, economic competitiveness and environmental sustainability, as well as in energy sector governance and energy security. Remarkably, it emphasizes the importance of:

- “Giving customers the right to choose their electricity supplier
- Introducing competition into the industry especially the generation sector
- Permitting open non-discriminatory access to the transmission system, and
- Encouraging private sector participation in the industry” [Department of Minerals and Energy 1998]

These bold statements originated not from any commissioned studies, neither did they emerge from a formal consultative process with industry members. Reform was not driven by the usual concerns of poor technical and financial performance, or the need to attract investment. Rather, they were the result of the convictions of a small group of analysts and government officials that were observing international trends in power sector reform, and were beginning to be concerned with the potential problems of monopoly power.

In echoes of the standard international model for power sector reform, the White Paper states that Government believes that Eskom will have to be restructured into separate generation and transmission companies and that Government intends separating power stations into a number of companies. The White Paper also affirms the importance of independent regulation.

The main supporters of the White Paper were industrial electricity users who wished to contain future rises in electricity prices. Initially, Eskom also supported the White Paper process despite its traditional uneasiness in engaging with policy processes in the public eye. Eskom has supported competition in principle, but in practice it resists any proposals that it should divest more than 30% of its generation stations. At times it has also suggested the introduction of a private strategic equity partner in the Eskom Holding company, which would have the effect of slowing down or making more difficult a subsequent unbundling of Eskom. It has also attempted to delay the separation of transmission services from Eskom’s other lines of business. At times, it has argued that placing transmission into a subsidiary company within the Eskom group would yield

sufficient unbundling. It has also presented alternative models for distribution that would preserve a more prominent role for the firm as a vertically integrated monopoly.

Major opposition to the proposals in the White Paper were presented to Parliament by the Congress of South African Trade Unions (Cosatu). In essence, they opposed privatisation and argued that Eskom should remain a vertically-integrated, publicly-owned utility and should be used as an agent of government to provide low-cost electricity services to all, especially the poor [Tinto 2002].

The 1998 Energy Policy White Paper created the foundations for a restructured electricity supply industry in South Africa. But much work was still required to define what a competitive industry might look like and when and how private sector involvement would be introduced.

In one of the rare occasions of World Bank involvement in South Africa, it sponsored a Ministerial Workshop on Electricity Supply Industry Reform held from 3-5 April 2000 in Midrand. The Minister of Minerals and Energy stated at the workshop that government's main objectives of reform are to:

- increase economic efficiency in investment decisions and operation so that costs and prices are as low as possible;
- maximise financial and economic returns to government from the ESI;
- increase the opportunity for black economic empowerment; and to
- protect public benefits such as widened access to the poor, energy efficiency ongoing R&D and environmental sustainability [Malambo-Ngcuka 2000].

The World Bank sponsored seminar brought to South Africa a number of experts with detailed knowledge of the reform experience in their own countries. There was no single ideologically-inspired message or proposed model. Yet all advocated the merits of competition, but warned of the importance of careful design of the electricity market. At the end of the workshop senior government officials, including representatives from Eskom and the NER agreed to a draft policy paper on restructuring the ESI [Department of Minerals and Energy 2000].

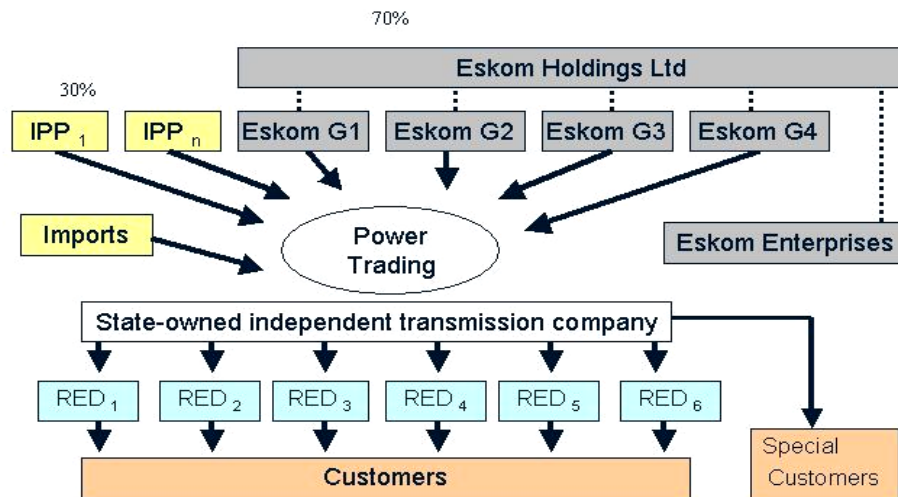
Eskom's top leadership, in the meantime, was alarmed at the extent of the reform proposals, particularly the recommendation to reduce Eskom's market share of generation to 35%. It lobbied at the very highest levels in government, drawing on its reputation for delivering low prices and for supporting government's RDP goals and its growing vision of an African renaissance, embodied in early versions of the New Partnership for African Development (NEPAD).

In May 2001, the Cabinet approved proposals for the reform of the ESI through a "managed liberalization" process. The elements of this are summarized below [Media briefing by Minister Phumzile Mlambo-Ngcuka 2001]:

- *Structure of the generation industry:* Eskom is expected to retain no less than 70% of the existing electricity generation market, with privatisation of the remainder, with the initial aim of transferring 10% to black economic ownership no later than 2003;
- *Vertical unbundling:* to ensure non-discriminatory and open access to the transmission lines, a separate state-owned Transmission Company will be established, independent of generation and retail businesses, with ring-fenced transmission system operation and market operation functions. Initially this transmission company would be a subsidiary of Eskom holdings and would be established as a separate state-owned transmission company before any new investments are made in generation capacity;
- *Market structure:* Over time a multi-market model electricity market framework will ensure that transactions between electricity generators, traders and power purchasers may take place on a variety of platforms, including bilateral contracts, a power exchange and a balancing mechanism. The market design should facilitate both physical and financial hedging. A transparent and independent governance mechanism would be developed for the power exchange; and
- *Regulation:* A regulatory framework will be put in place that ensures the participation of Independent Power Producers (IPPs) and the diversification of primary energy sources.

Figure 6 represents the future structure of the ESI in South Africa as envisaged in this May 2001 Cabinet decision.

Figure 6: Possible future ESI model in South Africa.



Eskom generation subsidiaries with open access and trading

Source: Author's Research.

Clearly, significant market power could be exercised in this model and there would be incentives for Eskom generation clusters to collude in their price bids. This threat could be partially ameliorated if the generating clusters were placed into separate subsidiary companies and if shareholder agreements and management contracts make it clear that each generation subsidiary should compete to maximize its own position.

In an agreement which originated at the Farm Inn Summit in October 2001, and which was signed on the 15 March 2002, the Department of Minerals and Energy (DME), the Department of Public Enterprises (DPE), the South African Local Government Association (SALGA), the NER and Eskom reached broad consensus on the next steps in reform.⁸ An ESI restructuring committee, chaired by DPE, would be established. Eskom would ring-fence its generation stations into clusters or portfolios for internal competition. Eskom Transmission would ring-fence its operations into wires and system operations. The agreement further envisaged that Eskom Holdings would establish subsidiary companies for Eskom Generation and Eskom Transmission (although this was later contested by Eskom). The internal pool would be converted into an independent market operation company (power exchange).

The DPE subsequently established an ESI restructuring office and detailed studies were undertaken by government-led, inter-departmental and stakeholder committees, with the support of consultants, on the clustering of Eskom generation plant and the creation of an electricity market, including a voluntary power exchange with a day-ahead-market, a balancing mechanism, a market for ancillary services and range of other electricity trading platforms, including bilateral contracts and financial hedging instruments. However, it appeared that the middle-level bureaucrats and consultants were far ahead of their principals, and when the cabinet memos were prepared to take the market design through to implementation, senior government officials and ministers seemed unenthusiastic.

6. The re-emergence of the state in the power sector

The idea of far-reaching ESI reform has been controversial from the start. Although there have been general briefings to the Parliamentary Portfolio Committees and workshops were held with industry stakeholders on the proposed market design, few details of the Farm-Inn agreement and the reform time-table have been made public. Organized labor (Cosatu) remains implacably opposed to any proposals to restructure the electricity industry. In 2002 they embarked on a political national strike and protested against the possible privatization of Eskom and other utilities and the affects that this could have on the poor. The strike caused a prominent and acrimonious interchange between Cosatu and the government, with the latter insisting that it would not be deflected from its restructuring agenda. However, government did start reconsidering its reform model. None of the target dates set out in the Farm-Inn agreement were met. While the distribution industry restructuring is going forward, no concrete steps have been taken to unbundled Eskom, to sell-off generation plant or to create competition.

In early 2004, the National Electricity Regulator conducted a survey of electricity stakeholders on their perceptions of risks facing the industry. Most stakeholders asserted that the quality and reliability of supply were deteriorating and rated the risk of electricity service failure as likely

and serious. They expressed concern about the capacity of government to lead the reforms and argued that policy uncertainty was having the effect of inhibiting investment in distribution systems as well as new generation capacity.

Government responded to the latter concern by appointing a technical advisor to assist in designing a tender for new generation capacity. The intent is to award a contract to an independent power producer before the end of 2005. Given the time necessary to complete environmental impact assessments and the likely construction times, it is unlikely that this new investment will solve the looming supply crisis. The inevitable consequence is that Eskom will continue to be regarded as the supplier of last resort. Government has now mandated Eskom to re-commission old coal-fired plant that had previously been mothballed (when there was surplus capacity) and also to take responsibility for the major share of new investments. 30 per cent of new investments have still been reserved for the private sector – but even here, Eskom is considering joint-ventures with private developers where it will own a majority share. The impact of these developments on the future competitiveness of the electricity sector in South Africa will be profound.

Eskom will thus continue to play a dominant role in the sector. The renewed reliance on Eskom mirrors a broader shift in government policy. After a decade of market-friendly reforms, government is concerned about inadequate economic growth and job creation, and persistent poverty amongst a significant proportion of the population. It sees the state playing a more significant role in infrastructure investment and development. State utilities in energy and transport are a key element of this strategy. Within this context, reform and regulation of state-owned enterprises will continue, in order to improve efficiencies and performance – but without introducing full competition or privatization.

The South Africa government has yet to articulate formally a new electricity policy. However, it is clear that one is emerging. Security of electricity supply is seen as paramount. Eskom will remain in state ownership. Private, independent power producers will be invited to bid for new capacity, but only on the margin of the industry. There may be some limited competition *for* the market – but a competitive wholesale electricity market with electricity trading now looks unlikely. The Minister of Minerals and Energy stated in parliament on 22 June 2004 that “the state has to put security of supply above all and above competition especially”.

How do we understand this back-tracking from previous commitments to move to competition in the power sector? Some stakeholders, such as labour unions have always opposed any move to privatization and competition. However, there are many instances where government has driven through reforms despite the opposition of organised labour. The re-emergence of state-led development of the power sector can be explained by a number of factors. First, the usual drivers for reform (poor technical and financial performance of state-owned utilities and the need to attract new investment) were never strongly experienced in South Africa. Eskom appears efficient because prices are relatively low (although some analysts take a different view) – and Eskom has managed to attract low-cost capital through bond-issues that have been well supported in both local and international capital markets. Second, while power sector reform proposals emerged within a broader commitment to reform state-owned enterprises, there was never an unequivocal political commitment to unbundled Eskom and to introduce competition

and private sector participation. It is probably true to say that policy developments ran ahead of the political process – i.e. the Energy Policy White Paper and subsequent proposals to Cabinet were developed and advanced mostly by energy analysts working in support of energy government officials (some informed by international developments in the power sector) rather than by key political constituencies. There was thus never any strong political leadership to implement the proposed reforms. Third, Eskom as a powerful and large state-owned enterprise has lobbied successfully at the highest levels to slow and reverse the proposals for unbundling, competition and privatization. Fourth, after the 2004 elections, the new ANC Minister of Public Enterprises has successfully won political consensus that the state (or state-owned enterprises) should take the lead in lifting investments levels in core infrastructure and that such investments could facilitate accelerated economic growth. These proposals are, in part, feasible because of the state’s relatively healthy fiscal position, but they also reflect the ideological leanings of the said minister and other key members of the new Cabinet.

This does not mean that the reform process has been completely reversed. Eskom is required to operate efficiently and must be financially sustainable. While it has been mandated to undertake 70 per cent of new investments, the remainder is being reserved for the private sector, i.e. a “hybrid-market” is being created. The regulator will continue oversight of the industry and distribution sector reforms continue – aimed mainly at consolidation and improved performance. But state-owned utilities will continue to dominate the sector for the foreseeable future.

7. Summary and conclusion

The dominant trend in the evolution of the power sector in South Africa over much of the last century was the growth and consolidation of a large and powerful state-owned, vertically-integrated monopoly, the Electricity Supply Commission (later named Eskom). Most of the early private power producers were gradually taken over by Eskom which became responsible for new supply. The main drivers for the increased concentration and public-ownership of the industry were potential economies of scale in power plant, the requirement for large amounts of capital that could be facilitated by government guarantees, and the fact that electricity was seen to be an essential ingredient of government’s industrialization strategy.

However, by the 1980s poor economic performance of state-owned enterprises (SOEs), combined with broader economic and political pressures on the apartheid state, caused government to look at reforming these institutions. The management of Eskom was not fully accountable and could plan and finance excessive generation capacity. Poor investment decisions were made. The result was massive costs to the economy and, initially, to the consumer. At the same time the vast majority of disenfranchised South Africans remained without electricity.

Consequently, Eskom’s governance was overhauled in the 1980s and new commercial principles were embedded in the operation of the utility. Productivity was improved and the financial guarantees of government were removed. Currently, Eskom’s financial and technical performance are relatively good, by world standards, although concerns remain around its investment efficiency. Following the democratic revolution of 1994, emphasis was given to

electrification, improvements in the electricity distribution industry, the creation of an independent regulator and the corporatization of Eskom (in parallel with reforms in other SOEs).

Prices are currently low, because there has been no need for investments in new capacity for many years, and the cost of the older plant has mostly been amortized. But South Africa is living on borrowed time. Prices will have to rise to fund the next wave of new capacity, expected in 2007 and beyond. Some analysts predict that new peak supply will be needed even earlier, without which rolling blackouts will visit South Africa.

A reform window opened in the late 1990s and early 2000s where the ESI might have been restructured to create a more competitive and efficient environment for new investment decisions. An Energy Policy White Paper and subsequent Cabinet decisions laid out a path of managed liberalization, including the sale of parts of Eskom and the introduction of a wholesale electricity market.

However, government still experiences ambivalence and doubts around embarking on a path of full unbundling, competition and privatization. Eskom is still seen as an important instrument of government policy, an apparently well-performing infrastructure industry that supports government's economic and social programme. Current low prices create a false complacency. And government faces resistance from organized labor, who has picked issues around Eskom reform as the battle-ground against privatization.

Government has re-asserted the lead-role of the state in infrastructure investment. Security of supply is once again the top policy priority. It has stated that Eskom will remain in state hands for now. Private investment may be possible on the margins – provided it is within the context of public-private partnerships.

The “standard” model of power sector reform of the past decade—vertical and horizontal unbundling, wholesale and retail competition and privatisation—has, in effect, been abandoned by South Africa, and increasingly by many other developing countries. This does not mean that governments will accept inefficient utilities. There is still a commitment to ensure improved performance by state-owned enterprises through appropriate governance and regulation. Capital constrained countries will also open up space for private investments – mostly within the framework of a “hybrid market” where the state utility remains dominant. What remains to be seen is whether the investment mistakes of the past can be obviated and whether security of supply can be achieved at an acceptable price.

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² South Africa's population is 44 million.

³ Eskom Annual Report 2003, assuming an exchange rate of 1 US\$ = R6.5.

⁴ When Eberhard asked municipal electrical engineers for maps and plans of areas that had access to electricity and those that did not, they were unable to produce any coherent or integrated picture. Planning for those who were unserved was simply non-existent.

⁵ Labour has become increasingly alienated from government. Gwede Mantashe, the general-secretary of the National Union of Mineworkers, warned at a rally in Johannesburg that the ANC should not take the support of workers for granted. "It must listen to the working class and get their support, or it should listen to big capital and lose their support". Cosatu embarked on a political strike on 30 and 31 August 2001 and marched to Parliament in protest against the government's plans to privatize state assets. There have been a number of protests and threatened strikes since.

⁶ Defined as capacity hours available x 100/total capacity hours in year.

⁷ Through a series of pricing compacts with the government, Eskom committed itself to a price decrease of 20% between 1992 and 1996, and a 15% reduction between 1994 and 2000. Actual price reductions were a little less than this.

⁸ A strategy for the implementation of restructuring of the South African electricity industry. An agreement between DME, DPE, Eskom and the NER, March 2002.
