RUNNING TO STAND STILL

Politics and Path Dependency
in South Africa's
Municipal Electricity Sector

THEO COVARY

UCT PRESS

Running to Stand Still: Politics and Path Dependency in South Africa's Municipal Electricity Sector

First published by UCT Press in 2022

First published in 2021 by Unlimited Energy (Pty) Ltd
8 Torwood Road, Forest Town 2193
Johannesburg, South Africa
theo@unlimitedenergy.co.za

ISBN (Web PDF): 978-1-991236-02-9

First edit by Strato Copteros
Copy edit and production by Liquid Type Publishing Services
Artwork and cover design by Trevor Paul
Printed and bound by Print It ZA

This book is an abridged version of the author's PhD thesis, *A Historical Institutionalist Analysis of the Evolution of South Africa's Municipal Electricity Sector Within the Broader Electricity Supply Industry*, which can be accessed at https://open.uct.ac.za/ or https://www.researchgate.net/profile/Theo-Covary. The author confirms that this is his original work and all material used has been appropriately referenced.

This book has been independently peer reviewed by subject experts.

CONTENTS

ABBREVIATIONS AND ACRONYMS

AGSA – Auditor General of South Africa
AMEU – Association of Municipal Electricity Undertakings
ANC – African National Congress
ASGISA – Accelerated and Shared Growth Initiative for South Africa
B-BBEE – Broad-Based Black Economic Empowerment
B2B – Back to Basics
BLA – Black Local Authority
BTI – Board of Trade and Industries
CDF – Capital Development Fund
CIGFARO – Chartered Institute of Government Finance, Audit and Risk Officers
COGTA – Ministry of Co-operative Governance and Traditional Affairs
CoJ – City of Johannesburg
COSATU – Congress of South African Trade Unions
CP – City Power (Johannesburg)
CPI – Consumer Price Index
CSIR – Council for Scientific and Industrial Research
DA – Democratic Alliance
DME – Department of Minerals and Energy
DMR – Department of Mineral Resources
DMRE – Department of Mineral Resources and Energy
DoE – Department of Energy
DPE – Department of Public Enterprises
DTI – Department of Trade and Industry
ECB – Electricity Control Board (replaced by NER and then NERSA)
EDD – Economic Development Department
EDI – Electricity Distribution Industry

EDIRC – EDI Restructuring Committee
EE – Energy Efficiency
ERIC – Electricity Restructuring Interdepartmental Committee
Escom – Electricity Supply Commission (Eskom from 1987)
ESI – Electricity Supply Industry
Eskom – Electricity Supply Commission (Escom/Evkom before 1987)
EU – European Union
EWG – Electricity Working Group
FBE – Free Basic Electricity
FBS – Free Basic Services
Foskor – Phosphate Development Corporation
5YSA – Five-Year Strategic Agenda
GEAR – Growth, Employment, and Redistribution
GJMC – Greater Johannesburg Metropolitan Council
GNU – Government of National Unity
GW – gigawatt(s)
GWh – gigawatt hour(s)
HI – Historical Institutionalism
Idasa – Institute for a Democratic Alternative for South Africa
IDC – Industrial Development Corporation
IDP – Integrated Development Plan
IMF – International Monetary Fund
IPAP – Industrial Policy Action Plan
IPP – Independent Power Producer
IRP – Integrated Resource Plan
Iscor – Iron and Steel Corporation
ISI – Import Substitution Industrialisation
ISMO – Independent System Market Operator
ISP – Industrial Strategy Project
ITSMO – Independent Transmission Grid System and Market Operator
JEU – Johannesburg Electricity Undertaking (City Power from 2000)
kWh – kilowatt hour(s)
kWp – kilowatt peak
LED – Local Economic Development
LGTA – Local Government Transition Act (of 1993)
LGTS – Local Government Turnaround Strategy
ME – Municipal Entity
MEC – Minerals-Energy Complex
MERG – Macro-Economic Research Group
MEU – Municipal Electricity Undertaking
MFMA – Municipal Financial Management Act (of 2003)
MLC – Metropolitan Local Council

MM – Merz and McLellan Consulting Engineers
MW – megawatt(s)
Nats – Members of the National Party
NDP – National Development Plan
NEES – National Energy Efficiency and Renewable Energy Targets
NELF – National Electrification Forum
NEP – National Electrification Programme
NER – National Energy Regulator (replaced in 2005 by NERSA)
NERSA – National Energy Regulator of South Africa
NGP – New Growth Path
NP – National Party
NT – National Treasury
NUM – National Union of Mineworkers
OECD – Organisation for Economic Co-operation and Development
PC – President's Council
PE – Public Entity
PFMA – Public Finance Management Act (of 1999)
PwC – PricewaterhouseCoopers
RDP – Reconstruction and Development Programme
RE – Renewable Energy
RED – Regional Electricity Distributor
REFIT – Renewable Energy Feed-In Tariff
REIPPPP – Renewable Energy Independent Power Producer Procurement Programme
RSC – Regional Services Council
SACP – South African Communist Party
SALGA – South African Local Government Association
SAR&H – South African Railways and Harbours Administration
Sasol – South African Coal, Oil, and Gas Corporation
SCC – State Security Council
SOE – State-Owned Enterprise
Stats SA – Statistics South Africa
ToU – Time of Use
UME – United Municipal Executive (replaced in 1996 by SALGA)
UP – United Party
VFPC – Victoria Falls Power Company
VFTPC – Victoria Falls and Transvaal Power Company
WET – Wholesale Electricity Tariff
WLA – White Local Authority
WTO – World Trade Organization
WWI – World War I
WWII – World War II

FOREWORD

Who has not read about, heard of, or discussed the conditions of the electricity sector in South Africa in recent years? Whether your profession is related to the sector or not, everyone and anyone has an explanation for the mismanagement of the national supplier and the role of the government in load-shedding, and an opinion on the appropriateness of the prevailing regulated pricing system for the economy. The stall in progress can be attributed to the complex nature of the sector's challenges, conflicting stakeholder objectives, the interrelation of government policy-makers at national, regional and local levels, and the entities in the sector being state-owned.

It is ironic however that in a country with so many *supposed experts* loudly offering so many solutions in the last decades, the electricity sector still malfunctions (to put it mildly), and the South African economy bears the brunt.

In South Africa, the focus of the research has shifted between the pricing structures of electricity – the Eskom applications to the National Energy Regulator of South Africa (NERSA) for price increases are always most interesting for energy enthusiasts – and the most cost-effective supply mix for electricity – the Integrated Resource Plan (IRP) is always a document for debate. Meanwhile, Eskom's "death spiral", management issues (corruption), lack of profitability, and changes in board have been on the front covers of newspapers and in the media on a frequent basis – and let me remind you of the most commonly used term of the last decade: "load-shedding".

As an economist by profession, I am particularly supportive of the motivation of this book, which is to go back to the idea that institutions are fundamental for the sustainability of every economy and specifically for the electricity sector in South Africa. This book works

on the premise of the complex relationship between the national economy, the three tiers of government, and energy supply and demand, where each stakeholder is represented with diverse agendas and objectives. The approach it follows is founded on the idea that if we don't understand these complex interlinkages historically and deeply, we won't be able to disentangle them and thus propose sustainable solutions.

Indeed, the proposed resolution in the book is based on the stakeholders' co-operation from a political-system perspective. And that is the biggest challenge in the South African reality – to get all of the energy sector's players to leave their individual agendas behind and agree to co-operate for the sector's and economy's overall advantage. After all, and ultimately, a well-functioning system that is in balance ensures that all stakeholders benefit.

When I first met and spoke with Dr Theo Covary, I enjoyed that we were both *energy enthusiasts and learners* – neither of us pretended that we knew everything and that we had all the answers. It was obvious from our first discussions that he believed in the interrelation of the public and private sectors and that efficiency of policies can only be realised from working with communities on the ground and from understanding the fundamentals of the system. His PhD dissertation, which this book is based on, was one of the first comprehensive municipal historical overviews with regards to electricity and energy, pinpointing policy structures and changes. He also aligned the theoretical context with the South African reality and conditions. Dr Covary is therefore a person who has the practical experience and expertise combined with a piece of the theoretical and academic knowledge necessary to explore holistic solutions for the South African energy sector.

Enjoy this thought-provoking book that will ignite new debates among energy stakeholders in the country.

Roula Inglesi-Lotz
Professor, University of Pretoria
President, South African Association for Energy Economics (SAAEE)

INTRODUCTION

"If you control Eskom, you control the South African economy." — Dr W. de Beer, ex-COO of EDI Holdings (Interview, 23 November 2016)

From its outset, the development of South Africa's Electricity Supply Industry (ESI) has embodied several striking and somewhat unique features, not least of which is that the discovery of the country's mineral wealth – diamonds in Kimberley (1860s) and gold on the Witwatersrand (1880s) – roughly coincided with great advancements in electrical-generation technology. This suddenly made electrification both financially and technically viable, and Kimberley switched on its electric street lights in 1882, becoming the first town to do so in Africa and the Southern Hemisphere, and the first in South Africa to have a Municipal Electricity Undertaking[1] (MEU). Another fascinating feature is the ESI's inordinately rapid development, which took place largely because the vast quantities of power needed by mining quickly attracted power companies and international investors. The predominance of the mining industry meant that supply of electricity to city and town residents, which was more complicated and financially less lucrative, was left to municipalities. Thus, from inception, the ESI developed in two separate streams, creating unique dynamics that still impact the country today.

In immediately recognising that the country's mineral resources were a "wasting asset" that would inevitably be depleted, the new government, following the formation of the Union of South Africa in 1910, moved quickly to develop and implement an industrialisation strategy. It aimed to modernise based on three pillars. The first was

its mineral wealth. The second was cheap labour. It saw the African black population as an inexhaustible and cheap source of labour and set about to deepen racial segregation. The final pillar was the extension of the mining industry's ultimate requirement: universal, cheap and reliable power. Here, government's priority was to consolidate and take control of the private-sector utilities supplying industry and the mines. It ultimately achieved this through the creation of the Electricity Supply Commission (Escom) in 1923. Similar control of the municipal ESI,[2] an important but certainly secondary priority, was eventually attained in the 1960s. Until then, however, municipal ESI was kept in check by ring-fencing MEUs' operations to their area of jurisdiction and imposing limits on how much electricity they could supply to individual users.

As decades passed and apartheid inevitably became untenable, with internal and international pressure mounting, the government became increasingly isolationist and focused on self-sufficiency. Energy was key, and Escom, as sole ESI giant, was allowed significant leeway if it supplied the power the country needed. For example, "innovative" funding practices unlikely to meet the most basic financial accounting guidelines were tolerated, as they eliminated the need for government to provide funding. Inevitably, this went too far, and by the early 1980s, large tariff increases (to fund Escom's construction programme) had the public and much of industry baying for action. This was containable, but Escom erred by provoking the ire of the authoritarian and reformist state president, P.W. Botha, who immediately reined it in.

Forced to modernise and subscribe to credible financial practices from 1987 onwards, Eskom, by which it was known from then on, emerged an unlikely hero before and after the first democratic elections in 1994. It made noteworthy contributions to providing electricity to the previously unserved, or very under-served, black areas.[3] It was once again enjoying a prolonged golden era, which lasted until the 2005 blackouts, when the lights went off and the Western Cape was plunged into darkness. But this was only a teaser of what was to come, albeit that national government and Eskom moved quickly to assure that the problem would be contained and that there was no crisis (Le Roux, 2006).

Such hopes quickly faded when the entire electricity system came close to collapsing, necessitating national rolling blackouts in late 2007 and early 2008. This had massive repercussions on citizens' daily lives and the economy, while it also raised serious concerns about the country's ability to host the FIFA World Cup in 2010.

In 2020, more than a decade after the near collapse, there appears

to be no end in sight. The nation still lives under the constant threat of blackouts, despite numerous but ineffective measures taken by government to address the supply shortage. One such measure was building the Medupi and Kusile coal-fired power stations, which were to add a combined 9.6 gigawatts (GW) of capacity. Begun in 2005, construction was bedevilled by huge cost overruns and corruption. The projects are now years behind schedule, with the stations' few currently operational units breaking down on a regular basis. Another measure that ultimately failed was the initially successful Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) that gained international recognition for how well it was managed,[4] but which was abruptly halted by government in 2015, primarily due to Eskom's refusal to enter into power-purchase agreements while ironically itself being unable to meet demand.

Corruption, patronage and loss of skills at Eskom have put its continued existence at risk (Jaglin & Dubresson, 2016), and as of 2020, it was technically bankrupt. Finally, and of most relevance to this book, a crucial stumbling block remains national government's unwillingness to allow municipalities to generate electricity without ministerial approval. This was a right that MEUs enjoyed from the turn of the 20th century until the late 1960s, when it was taken away by government at Eskom's request – with the matter now before the Cape and Gauteng High Courts. As compelling as this narrative is, however, I contest that it is far more complex, especially given South Africa's institutionalised racism until 1994 and the results thereof. And it is here that we turn to local government as a vital component of the tale.

Internationally, strong local government[5] is viewed as desirable. It is at the forefront of service delivery. In theory, it is also more readily held accountable on issues that directly impact residents – something that is much harder to do if services are administered by the centre, where national interests take priority. Residents are also more likely to trust closer local government than "distant" national government (Siddle, 2011, p.3). And while local government was neglected and subordinate to provincial and national government under apartheid, it was given the same standing as these spheres of government under the 1996 Constitution. Equal does not necessarily mean independent, though, without the requisite financial means. And therein lies the rub.

Central authorities such as national government are loath to share their tax-raising instruments with other tiers of government. This happens for several legitimate reasons, such as:

- To avoid over-taxation;
- To avoid tax exporting (which happens when one jurisdiction or authority imposes taxes on the residents of another);
- To ensure the efficiency of centralised tax collection;
- To avoid taxpayers believing they are being double taxed; and
- To ensure focus on broader objectives, such as income redistribution or macroeconomic stability. (Bird, 2001; Bird, 2011; Slack, 2009; Martinez-Vazquez, 2015; Bahl & Linn, 1992)

Therefore, it was decided and constitutionalised that while municipalities could fund their activities by using the surpluses from the provision of services such as electricity, water and garbage removal, they could not levy taxes that would compete with those of national government. This meant that property tax was the main, and in many instances the only, true tax revenue source for local government. Given the politically charged and weak economic conditions and the imperative of independent and democratic local government at the time, this solution may have been the most appropriate. But was a different model ever an option?

The municipal ESI has a longer history than Escom/Eskom. The Association of Municipal Electrical Engineers (now the Association of Municipal Electricity Undertakings [AMEU]) was formed in 1915 when 22 engineers from 17 municipal towns got together to promote and explore common interests such as technology, national standards, tariffs and distribution systems. Over time, as cities grew, so did the demand for electricity, and the MEUs became utility companies, generating and transmitting electricity within their supply area. Overall, MEUs were known for their competence, and operated profitable businesses, whose income potential municipal finance departments were quick to recognise and exploit. These departments moved to increase tariffs on electricity.

But was this a good idea? The undertakings didn't believe so, arguing that inflating tariffs to avoid increasing property taxes was effectively levying a tax on electricity. This may be counter-productive, they argued, because consumers could respond by reducing consumption or switching to other fuels. Ultimately, the debate between councillors, who supported the relief of rates from electricity surpluses, and the MEUs, who did not, raged for over 15 years, while the practice continued and gained momentum, making its reversal more and more difficult. In the end, political expediency won the day, and the practice became established and accepted by the early 1940s.

Over the next two decades, MEUs went from strength to strength. Indeed, during the 1940s and 1950s, when Escom was still establishing itself and struggling to meet the ever-increasing demands from mining and related energy-intensive sectors, it entered into long-term supply agreements with Johannesburg Electricity Undertaking (JEU) and did not object to JEU's applications to construct new electricity-generation plants. Escom then reversed its decision in the mid-1960s when its build programme had stabilised and a national grid was within grasp. Now it convinced government to disallow municipalities from generating electricity, but it didn't object to MEUs' existing right to distribute electricity. MEUs were now forced to squeeze as much life as they could from their existing power stations and concentrate on their distribution grids, while entering into supply contracts with the only supplier, Escom. This made Escom a price-maker, and there was little room for negotiation. And with national government putting all its energy into defending and maintaining apartheid, little attention, and even less funding, was given to municipalities, who were expected to be self-funding. The surpluses from user charges to fund municipal operations now became indispensable.

The onset of democracy brought a new set of issues for municipalities. They now had to service black townships, which had largely been ignored by the white local authorities, but which were newly integrated into their jurisdictional areas. Eskom, under its "Electricity for All" programme, which started in the late 1980s, had taken the lead in this regard. It rapidly overshadowed the apartheid government's efforts to provide services to black areas, which were funded by the Regional Services Council (RSC) levy that was collected in white areas.[6]

The rapid integration of previously under-served areas into municipalities thus put MEUs under immense pressure to respond and keep up. At the same time, they were facing serious structural, technical and financial challenges. On the technical side, they had to absorb new supply areas with different existing equipment and infrastructure. On the financial side, funds that were previously allocated to capital projects were frozen or arbitrarily withdrawn for non-electrical projects. More than ever, protecting and maintaining user fees remained a municipal priority.

The hypothesis of this book is that the provision of basic services for the majority of South Africans who were side-lined under apartheid fell at the feet of local government. This was mandated by the constitutional, regulatory and policy framework after the 1994 democratic elections. The aim was to bring government closer to the

people by adopting the principles of decentralised government, which in turn would strengthen democracy.

The right of municipalities to fund their activities from surpluses generated from the provision of services, and primarily from electricity distribution, was enshrined in the Constitution. But while this provided a reliable revenue source, it entrenched an unsustainable business model for MEUs. More importantly, however, it resulted in much deeper implications for the national ESI and is one of the contributing factors pushing the national ESI to breaking point. Here, national government soon recognised the consequences of this decision, and from 2000 onwards, attempted to reform the sector under the decade-long Regional Electricity Distributors (REDs) initiative. However, it was ultimately forced to abandon REDs, leaving the electricity-distribution model that has been in place since electricity was first supplied by municipalities largely unchanged.

More than anything, national government's failed reform efforts, which did not lack commitment or conviction, point to the complex linkages that exist between:

1. Local government and Eskom (its competitor and supplier, in a strained relationship of "co-opetition"), which by extension includes national government as Eskom's only shareholder; and
2. Eskom, government (national and local) and MEUs (in a conflict traceable to the start of the 20th century, with local government as the "political master" of MEUs).

Indeed, the vested interests, which developed over many decades and are now firmly entrenched, point to the need for a much deeper understanding of the situation, if effective and lasting reform is to be accepted by all affected stakeholders. Ultimately, failure to address the status quo is likely to:

- Further hamper local government in achieving its service-delivery mandate;
- Have significant negative financial and operational impacts on the national utility;
- Be a drag on the national and municipal economy; and
- Compromise and frustrate related national policies, such as those on climate change and energy-efficiency targets.

In order to make sense of the complex nature of such a milieu, I use both a conceptual and a theoretical framework.

I use the conceptual framework to disentangle the triangular dynamics between national government, Eskom, and local government. This underpins the research. Through it, I introduce key concepts that help us better understand local government functions and funding, the inherent power dynamics between players, and the competing interests involved. Here, the analysis considers the international context in order to provide a frame of reference and ensure that any distortions of key concepts applied to the local context are not overlooked. Most importantly, such a common point of reference allows discussions in later chapters to flow from a shared conceptual point of departure. We begin with the connection between politics and administration, followed by discussions on notions of centralised and decentralised government; both of which feed into the analysis of municipal funding models that follows (Chapter 3).

For the theoretical framework, I have chosen new institutionalism, which is an approach that explores how the structure of institutions and their rules or norms constrain or enable the choices and actions of individuals who belong to them. This is an appropriate framework because South Africa's ESI (generation, transmission and distribution) has almost exclusively been built, owned and operated by the state since its genesis at the turn of the 20th century.

On this basis, we view the two primary protagonists, Eskom and MEUs, as political constructs, with new institutionalism accordingly allowing us to triangulate economics, institutions and politics. March and Olsen (1989 & 1995) characterise an institution as: "a relatively enduring collection of rules and organized practices, embedded in structures of meaning and resources that are largely invariant in the face of turnover of individuals and relatively resilient to the idiosyncratic preferences and expectations of individuals and changing external circumstances".

If institutions are set up to create certainty, reduce transaction costs and improve operational efficiency and/or co-operation for the primary purpose of achieving outcomes valued by society (North, 1990, pp.3–9), then we can classify our protagonists as such. Certainly, as this book will show, these institutions played, and continue to play, a key role in the determination of social and political outcomes (Hall & Taylor, 1996, p.936).

A key objective of new institutionalist analysis is to understand and explain why actors choose to define their interest in a particular way and not in equally plausible alternative ways (Immergut, 1998, p.7). However, new

institutionalism also tries to avoid unfeasible assumptions that require too much of political actors in terms of normative commitments (obligations), cognitive abilities and limitations of decision-makers (bounded rationality), and social control (capability) (March & Olsen, 1995, p.16). It factors in that actors are prone to making mistakes. It also offers three primary potential approaches or perspectives:

1. Sociological – anchored around sociology, organisational theory, anthropology and cultural studies;
2. Rational choice – rooted in economics and organisational theory; and
3. Historical – the chosen approach for this book, and which is based on the assumption that institutional rules, constraints, and the responses to them over the long term, guide the behaviour of political actors during the policy-making process.

Significantly, because the historical perspective offers a way to understand the intricacies of political and economic decisions over a truly long period of time, and because it shows that historical developments are seldom straightforward or linear, it is suitable for this book.

It also helps us understand the dynamics of the power relations present in existing institutions by means of which certain actors or interests have greater power than others in the creation and future trajectory of new institutions. This then allows us to identify the reasons why a particular direction was pursued over others, while yielding two important outcomes:

1. It isolates the motives of the dominant vested interests; and
2. Its capacity to access the actual, rather than the perceived or assumed available alternatives discarded at the time, creates a more complete understanding of the issues involved, so facilitating case study counter-factual analysis.

Here the hypothesis recognises that while institutional change *has* occurred in South Africa over the last 120 years, the core tenets of policies initiated in the early 1900s continue to influence decision-making. The practices of state institutions in which inertia has taken hold are seemingly impervious to change. And historical institutionalism, based on the concept of path dependence – when the outcome of a process depends on its history (previous outcomes) rather than on current conditions – now provides us with a robust framework

to explain present-day outcomes. It does so by recognising the starting point and then tracing the sequence and timing of institutional decisions and exogenous events, to identify those that matter and why. As McCarthy (2011, p.4) explains:

> For historical institutionalists history really matters, because the present and the future are connected to the past by the continuity of a society's institutions. At the heart of historical institutionalism is the idea that policy choices made when a policy is being initiated or an institution formed, will have a continuing influence long into the future. Not only that, the path chosen may often be sub-optimal due to compromise and political expediency.

These themes of historical change and path dependency thus need to be interrogated appropriately to gain a better understanding of:

1. Why events have unfolded as they have; and
2. What the results are of changes to the mandate of MEUs and the municipal funding model in South Africa at identified critical junctures (points of uncertainty in which the decisions that important actors make can influence the selection of one path over other possible ones).

Since the relationships between the three tiers of government are already complex (as will be seen in Chapter 2) and are further complicated by the monopolistic nature of Eskom, while there are also relational, regulatory, and funding policies (Elson, 2008, p.6) to take into account, each dimension needs to be analysed separately and all as a whole.

In delivering such a detailed historical account and institutional analysis of the municipal ESI in South Africa, the research in Chapter 4 provides context by presenting three international case studies. Most notable of these is England, from whom, as the country's former colonial master, South Africa copied several governance and legislative frameworks, many of which remain in force. The analysis of the evolution of South Africa's three tiers of government in Chapter 3 and their use to electrify and industrialise the country (Chapters 4 and 5) also illustrates how national government, from the formation of the Union in 1910, pursued, and continues to pursue, two fundamental but diametrically opposing ambitions:

1. A financially "self-sufficient" local government, which in reality is over-burdened and has limited scope to collect revenue

needed to administer its mandated municipal functions (this revenue comes in the form of property tax and surpluses from services – with the majority by far being raised from electricity sales); and

2. A vertically integrated utility with a key role in the economy (Chapter 4).

The inherent contradictions between these ambitions drive an enduring conflict that has reached fever pitch in the last 20 years.

Complicating matters even more is the added paradox of conflicting national objectives. On the one hand, neo-liberal economic policies adopted by government are supportive of cost-reflective tariffs (tariffs based on the true cost of electricity and that are not falsely reduced or inflated) to enhance competitiveness and productivity. Yet, on the other hand, national policy calls for developmental local government, where a significant portion of funding is sourced through cross-subsidisation (which happens when a municipality uses surpluses from providing services to people to fund its activities). Ultimately, this book shows that such contradictions and dichotomies have been, and continue to be, the basis for the discord that exists in the ESI – leading to broader political and economic fallout for the country, and to the death knell of municipal Electricity Distribution Industry (EDI) reform from the late 1990s onwards.

This was demonstrated once again from 2010 on as a new and imminent structural crisis: the so-called death spiral. This threatens the entire ESI, and the EDI specifically, as detailed in the case study in Chapter 5. Yet, the failure of government (national, local, NERSA, and Eskom) to adequately deal with the crisis, and perhaps even its inability to do so due to the lock-in of long-ingrained trajectories, is impacting negatively on developmental local government – particularly service delivery. And if left unresolved, it will undoubtedly result in the same impasse as always (failure to restructure) but with graver and graver economic and political consequences that South Africa as a nation can ill afford.

Having now set the scene, and before we delve into decentralised local government in Chapter 1, it's important to make a note on the structure of this book. Electrification largely coincides with the discovery of minerals in South Africa. From this period until 1910, however, the analysis limits itself to contextual background. From Union onwards, three time periods have been identified, mostly because particular groups dominated the control of each period:

1. From 1910 to 1948, the English-speaking population controlled mines and the economy;
2. In 1948, the nationalist, Afrikaner-supported National Party (NP) won the elections, formalised apartheid, and wrested significant control of the economy for Afrikaners; and
3. The NP ruled until the first democratic elections in 1994, when the African National Congress (ANC) came into power and the third and final period began.

While the historical analysis is detailed for each of these three periods, it is restricted to 2017 in the case of the final period, since the research was only conducted up until this date. (See the Addendum, which provides a brief update for the period 2017 to April 2021.)

Figure i illustrates how just four political parties, and in reality, three – since the South African Party was dissolved to form the United Party in 1934 – have dominated executive power in South Africa. This is relevant because common sense would dictate that during long periods of uncontested control, the removal of existing policies to introduce new ones would be significantly easier. Indeed, since 1910, in a period of 107 years, South Africa has only had 12 heads of state,[7] implying that on average each one has held their position for 9.5 years.[8] Furthermore, the transition from one period to the next is characterised by a fundamental transfer of power and control from one cultural or race group to another. Under these circumstances, the opportunity for sweeping change to take place is not only probabilistic but expected (whether it materialises or not).

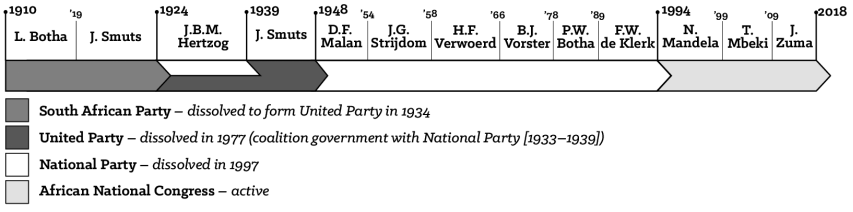


Figure i: Political Parties Controlling South African Government Since 1910

Note

Apartheid legislation segregated people based on racial classifications. The Population Registration Act No. 30 of 1950 divided the population into three main racial groups: Whites, Natives (Blacks), and Coloured people (people of mixed race, as well as people of Indian origin). Race was used for political, social, and economic purposes. These classifications in no way represent the views of the author, and the author does not accept the use of race as a basis for discrimination. These terms are used to reflect written sources, data and also to highlight how race was the basis of all government planning prior to 1994.

Notes

1. The term "electricity undertaking" was introduced by the Transvaal Power Act No. 15 of 1910, which defined the generation and distribution of electricity in a specific area. In 1956, the Association of Municipal Electricity Undertakings (AMEU) adopted the following definition: "A local authority carrying on an electricity supply undertaking." "Supply" included generation and distribution.
2. This book makes reference to both municipal "ESI" and "EDI" (Electricity Distribution Industry). Until the late-1960s, MEUs generated and distributed electricity within their jurisdiction; hence "ESI". In 1969, municipalities agreed to relinquish their right to generate electricity in return for exclusive distribution rights; hence "EDI". The terms are not used interchangeably but refer to the time periods. Where both periods are being addressed, then "municipal ESI" is used. The *Electricity Pricing Policy of the South African Electricity Supply Industry*, issued by the Department of Minerals and Energy (DME) in 2008, defines EDI as the "distribution industry connected to supply voltage not exceeding 132 kV" and ESI as "generation, transmission and distribution".
3. During apartheid, local government was split according to race. As a result, it was disjointed, and separate infrastructure existed for each race group, with white residential areas well serviced and areas inhabited by all other races having a very low level of service.
4. By 2013, after three rounds of bidding, 64 projects valued at US$14 billion to generate 3.9 GW had been selected (Eberhard & Naude, 2017). By 2017, the updated figures were: 112 IPPs, 6 422 MW, and R201.8 billion (DoE, 2017).
5. The book refers to both "local government" and "municipalities". For the purposes of this book, these terms have the same meaning and are used interchangeably to avoid excessive use of the same word.

6. The Regional Services Council Act No. 109 of 1985 aimed to achieve economies of scale and increase efficiency by reducing the duplication of services based on race, by providing them on a joint basis. To fund this, the Act called for a levy to be charged by employers on employee wages which had to be paid in their region.
7. This excludes President Cyril Ramaphosa, who was elected state president in February 2018.
8. Excluding Kgalema Motlanthe, who was caretaker state president for eight months in 2008/9, from the time Thabo Mbeki resigned until national elections were held.

CHAPTER 1.

DECENTRALISED LOCAL GOVERNMENT

"For anyone who might not yet have noticed, political decentralization is in fashion." — Treisman (2007)

1.1 INTRODUCTION

With local government playing such a prominent role in this book's analysis – and particularly in the triangular dynamics between it, national government and Eskom – this chapter provides a working definition of the concepts and terms applicable. It especially focuses on recurring themes directly impacting on discussions and analyses in some of the chapters that follow. We will unpack the functions of local government, its funding, its relationship with national government, and the inherent power dynamics and competing interests of the different parties involved. We consider both the international and the South African context in order to provide a common point of reference and ensure that we don't make any distortions when applying our key concepts to South Africa. Firstly, we explore the connection between politics and administration. Secondly, we unpack notions of centralised and decentralised government. Both of these topics feed into the analysis of municipal funding models that follows.

1.2 THE LINK BETWEEN POLITICS AND PUBLIC ADMINISTRATION

In "The Study of Administration", Wilson (1887) argues that administrators are autonomous from politicians and can apply the principles of resource

optimisation in the execution of their duties. They are thus able to manage the public sector in an efficient and independent manner. Given that public administration is an extension of the state, however, often with much more than administrative optimisation at play, a more pragmatic approach eventually came to the fore in the 1980s. This held that true independence from politics in public administration is not possible (Svara, 2001, p.180).

Accepting that the primary concern of public administration is to achieve objectives that are predominantly politically determined, and that public administration and politics cannot be separated, the question Tötemeyer (1985, p.1) poses is: Does the administrative function complement politics or is it subordinate to it? Tötemeyer argues that the answer is to be found in the extent to which democracy prevails in a country, whereby society holds government accountable through electoral democratic processes. This means it is necessary to maximise citizen participation at local government level. Mechanisms must be in place to ensure local governors are held responsible to the governed for their actions (Blair, 2000, p.35).

1.3 CENTRALISED AND DECENTRALISED GOVERNMENT

1.3.1 OVERVIEW OF AND DEVELOPMENTS DURING THE 20TH CENTURY

The definition of democratic local government is universal: An administrative and executive body that is elected by the community it represents to preside over the inhabitants of a specific geographic area. Local governments vary in size and structure and operate under different conditions, depending on a country's system of government. In theory, local governments strive to meet their inhabitants' needs for goods and services in a cost-effective manner (Alao et al., 2015, p.61). In fulfilling these functions, and within the overall system, local governments have varying degrees of power to act autonomously, and are authorised to undertake legislative, administrative and semi-judicial functions. Local government has the power to implement policies and programmes, raise revenue, formulate budgets, employ staff and operate going concerns to provide services. But local government is subordinate to central government and is generally the lowest "tier" of government. Central government is the first tier; provincial or regional government is the second tier; and local government is the third tier.

Conceptually, President Franklin D. Roosevelt's "New Deal" welfare state, introduced during the Great Depression of the 1930s, shifted power to national government and pioneered centralised government,

or what is more commonly known as "big government" (Wallis & Oates, 1998, p.156). Western Europe then adopted a similar model to rebuild its post-World War II (WWII) economies and also as a mechanism to keep tight control in the Cold War era, during which there was the constant threat of war. The Soviet Republics and Eastern Europe adopted an even more centralised model under communism, with a similar situation also existing under dictatorships. There were numerous such dictatorships between 1945 and 1970, after which many began to fall. Simultaneously, Keynesian economics, which justifies government intervention through public policies in the pursuit of full employment and price stability, dominated Western economic theory and policy after WWII.

This all started to change in the 1970s, when many advanced economies suffered stagflation, which combined inflation, slow growth and large public-sector deficits (Jahan et al., 2014, p.53; Sanderson, 2001, p.297). The ability and capacity of "big government" to solve all the problems was reconsidered, and many sought to reduce its size and scope by adopting a more decentralised approach, with power in the USA, for example, shifting back to individual states. This trend grew, and by the late 1980s, governments around the world entered a cycle of decentralising fiscal, political and administrative responsibilities to lower levels of government (Work, 2002; Litvack et al., 1998; Weale, 2006; Hood, 1995; Heller, 2001; Manor, 1999; Treisman, 2007). Explaining this, Litvack et al. (1998, p.1) cite the introduction and strengthening of democracy around the world, and "the plain and simple reality that central governments have often failed to provide effective public services".

1.3.2 DECENTRALISATION

Decentralisation is not easily implemented, and the achievement of public-sector governance and reform objectives is largely contextual, because application varies (Siddle & Koelble, 2013; UNDP, 1999; Litvack et al., 1998; Treisman, 2007). As Manor (1999, p.10) points out, decentralisation in India is bound to mean something different to decentralisation in Botswana.

A key precondition of decentralisation is central government consciously and willingly transferring power to local government, and the necessity of functional co-existence of the two. In this, the existence of democratically elected local government, held accountable by its constituents, creates legitimacy and autonomy, and implies that authority is distributed horizontally rather than hierarchically (Heymans & Tötemeyer, 1988, p.5).

Importantly, decentralisation occurs over time, is a process, and is the product of reforms. Moreover, decentralisation is further complicated by there being three different types (Siddle & Koelble, 2013, p.20):

- **Administrative:** The responsibility to deliver services is transferred from national to sub-national levels, resulting in a deconcentration of power;
- **Fiscal:** Revenue from central government and the authority to raise revenue from local sources are transferred from national to sub-national levels; and
- **Political:** Political power and authority is transferred from national to sub-national levels, which involves balancing the exercise of power between various levels of government.

At a practical level, then, decentralisation aims to transfer duties to the lowest level of government capable of executing them (Work, 2002, p.5; UNDP, 1999 quoting Kaul) and can be categorised into three levels:

- **Devolution** provides the highest level of autonomy, in which local government finds itself outside of direct central government but is still subject to national policies and laws such as the constitution;
- **Deconcentration** transfers power to an administrative unit of central government; and
- **Delegation** involves transfer of specific duties under a contractual arrangement.

From the above, it is evident that in the case of deconcentration, local government exists in name only and is devoid of local accountability, as units of central government are not accountable to local citizens (and voters), but to their vertical hierarchy. Which is why it is crucial to separate decentralisation and deconcentration.

1.3.3 BENEFITS AND SHORTCOMINGS OF DECENTRALISATION

Treisman (2007) sought to determine the effects of decentralisation, but concluded that the net results were inconclusive. The primary reason was that consequences tend to be complex and obscure, as many effects pull in different directions. Table 1.1 now summarises the perceived benefits and shortcomings of decentralisation.

Table 1.1: Benefits and Shortcomings of Decentralisation

Benefit	Shortcoming
Administrative efficiency	
Allows government to manage the provision of goods and services, which may vary across regions, more cost-effectively and efficiently	Administrative, not political, decentralisation can achieve this. Multi-tier structures are costly and can lead to misallocations. Cost-benefit analysis is a more appropriate driver – not reform
Local competition	
Local government competing for mobile residents and/or investment – encouraging performance	Robust competition amongst municipalities is hard to achieve. If it is, it's often perverse – resulting in unfavourable outcomes
Fiscal incentives	
Increased local revenue grows local economic activity, benefitting the nation as a whole	It decreases the share or revenue of other levels of government. The net result is indeterminate
Democracy	
As local issues are more quantifiable than national ones, increased local participation enhances accountability, as voters in small groups can co-ordinate more effectively	Citizens can be as politically active in a centralised system. Multiple government tiers make apportioning blame or credit harder, especially when responsibility is shared across the tiers
Checks, balances and liberty	
Strong local government has the potential to keep central government in check and protect individual freedoms	Local government is only likely to challenge national government to protect its local interests
Veto players and change	
Increasing the number of actors required to effect policy changes leads to greater stability	A definite advantage; however it may be counter-productive if entrenched policies are deemed "bad"
Local information and policy innovation	
Better placed to collect local information and act on it	In theory, central government should be able to do the same
Ethnic conflicts	
Reduces demands for autonomy; promotes co-operative behaviour amongst groups and lowers political stakes	May increase demands for autonomy, heighten ethnic conflict between tiers and intensify conflicts. Benefits can go both ways

Source: *Treisman (2007)*

The view of the World Bank is that decentralisation can yield positive results (efficiency and improved public-sector responsiveness) or negative results (threat to economic and financial stability). This is determined inter alia by how it is applied, as well as prevailing local conditions (Litvack et al., 1998, p.107). Ultimately, it is about potential – guaranteeing nothing (USAID, 2000, p.8), which is a disturbing conclusion, given the vital importance attached to the success of decentralisation by the World Bank (Siddle, 2011).

Ultimately, decentralisation has not proved to be the panacea for reforming and transforming local government operations and strengthening democracy. Mixed views are held on its effectiveness, while a growing number of studies show that implementation is difficult and that each experience is unique and likely to yield mixed results (Agrawal & Ribot, 1999; Johnson, 2001; Meenakshisundaram, 1994).

1.4 OVERVIEW OF MUNICIPAL FINANCE SOURCES

1.4.1 A VIEW ON THE RELATIONSHIP BETWEEN NATIONAL AND LOCAL GOVERNMENT

A feature of all countries, except for micro-states, is a second tier of government below the centre. South Africa has had three tiers since 1910: national, provincial and local.[1] Lemon (2002, p.18) identifies three reasons why a modern country requires additional tiers:

1. **Administration**: Large, centralised government is bureaucratic and needs a mechanism to administer functions more readily and efficiently at local level;
2. **Legitimisation**: A lower tier of government provides legitimacy by allowing a certain degree of local autonomy; and
3. **Redirection of blame**: Here, Lemon cites Dear (1981), Clark & Dear (1984) and Rakodi (1986, p.437), who astutely note that a benefit of national government reducing its level of control is that, when useful, it can redirect blame for some of its "knotty problems" (Cockburn, 1977), such as service delivery, to subordinate levels of government.

The role of local government in South Africa has thus been crucial, both before and after the first democratic elections in 1994, where:

1. Prior to 1994, all municipalities were required to be almost

entirely financially self-sufficient (resulting in some autonomy and independence within the context of a highly centralised and autocratic state); and

2. After 1994, the Constitution elevated local government to one of three spheres of government. The Constitution mandated local government to anticipate and address local needs through the provision of specified functions, for which it is entitled to collect revenue (in addition to the funding it receives from national government in the form of equitable share and financial transfers).

If local government addresses local needs satisfactorily, this will ensure national government's legitimacy, and this has been South African local government's primary focus. This need is especially acute in South Africa, where local government's ability to deliver basic services to the majority of the population, who received very poor service delivery or were even excluded totally, is directly linked to improving the electorate's impression of national government's capacity and capability. This ultimately leads to tension between local and national government. At times, conflict between two levels of government will occur even if both spheres are governed by the same political party, and may even go as far as the lower tiers opposing the state (Lemon, 2002, p.20). And while degrees of autonomy differ amongst countries, local municipalities are not sovereign and would have no existence without national government, so their ability to act independently is inherently limited.

Local government provides many different services to its customers (residents), for which it charges a fee. And its structure, role and mandate allow it to be motivated by servicing needs rather than by accumulating profit. It can also tax its residents for additional revenue (Freire & Stren, 2001, p.171). Levying taxes is of course unpopular with residents, so it is imperative that local government does this in a manner that is deemed equitable and reasonable.

For the purposes of this study, it was found that research into local government structures and financing models from the mid-1980s on was most beneficial. It was from this time onwards that the decades-long global political status quo under the Cold War was challenged and changed in the following ways:

- The communist system in Eastern Europe and the Union of Soviet Socialist Republics (USSR) fell in 1989;

- China relaxed direct political control over its citizenry;
- Keynesian economics gave way to neo-liberal policies; and
- Rapid advances in technology, transport and communications irrevocably transformed business and social practices.

These factors precipitated globalisation, one of whose knock-on effects was the acceleration of urbanisation, which was to place massive and continuous pressure on municipal service delivery.

During this period in South Africa, apartheid's demise was both certain and imminent; with densely populated, mostly poverty-stricken black townships, which had little to no access to municipal services, having to now be absorbed into local government. This would have massive ramifications on the future structure of local government, and it ultimately influenced the final outcomes and decisions about the roles and responsibilities allocated to local government in the 1996 Constitution, as well as how they would be funded.

In keeping with the period in question, the next section provides a theoretical overview of international municipal funding models developed and encouraged by international development-finance agencies and academics at the time. These sought to assist and influence the new municipal financial frameworks being simultaneously implemented across the world, including in South Africa.

1.4.2 MUNICIPAL FUNDING MODELS

At its core, local government has four basic sources of funds, with several variants for each source (Table 1.2).

Table 1.2: Total Revenue Sources of Local Government

Revenue source	Influenced by:
Taxes	**Size of the economic base of the city**: Made up of per-capita income level and population size
	Relation between the economic base and the various tax bases: The municipality has greater influence here, as policy interventions which promote business tend to have a positive knock-on effect on residential property prices, on which property rates are based
	Statutory tax rate: Rate is controlled by local government and can be increased, decreased or kept constant
	Collection efficiency, which is defined as the ratio of actual tax collection to statutory tax liability
	The mix of taxes selected: Local government can determine how available instruments are applied, subject to national government approval
User charges	**Quantity** of service per capita and the **unit charge** for the service. Transportation, municipal parks and zoos are good international examples of services which are not able to cover costs, whereas utility services tend to generate surpluses
External funds	**Grants and loans:** Transfers from national government, which may also be discretionary, are not under the control of local government
Loans	**Borrowing:** Appropriate only for major capital expenditure and not used to finance operational expenditure

Source: *Bahl & Linn (1992)*

Mainstream economic thinking under the fiscal decentralisation model supported local government generating as much revenue as possible from its own sources, but complying with two basic principles:

1. The service or function provided must be clearly linked to the revenue source; and
2. Services should be financed by their beneficiaries.

Under these conditions, private services supplied by local authorities are thus excludable. For example, if a consumer does not pay for the service, they can be cut off. Public services, such as street lighting and firefighting, should be financed from local taxes. Redistributive and spill-over effects (such as social assistance and housing) exceed the mandate of local government, but if responsibility for these lies with local government, they must be funded from inter-governmental transfers, and not from user fees or local taxes (Figure 1.1) (Farvacque-Vitkovic & Kopanyi, 2014; Slack, 2009; Bird, 2000,

2001 & 2011; Martinez-Vazquez, 2015; Dewees, 2002; Freire & Stren, 2001; Boyle, 2012; Bahl & Smoke, 2003a).

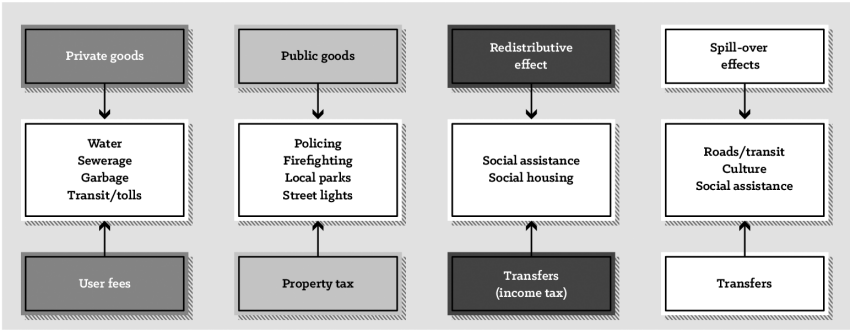


Figure 1.1: Financing Tools for Municipal Functions and Services

Source: *Slack (2009)*

To the greatest extent possible, the financing tools listed in Figure 1.1 should aim to conform to as many of the economic principles listed in Figure 1.2 as possible.

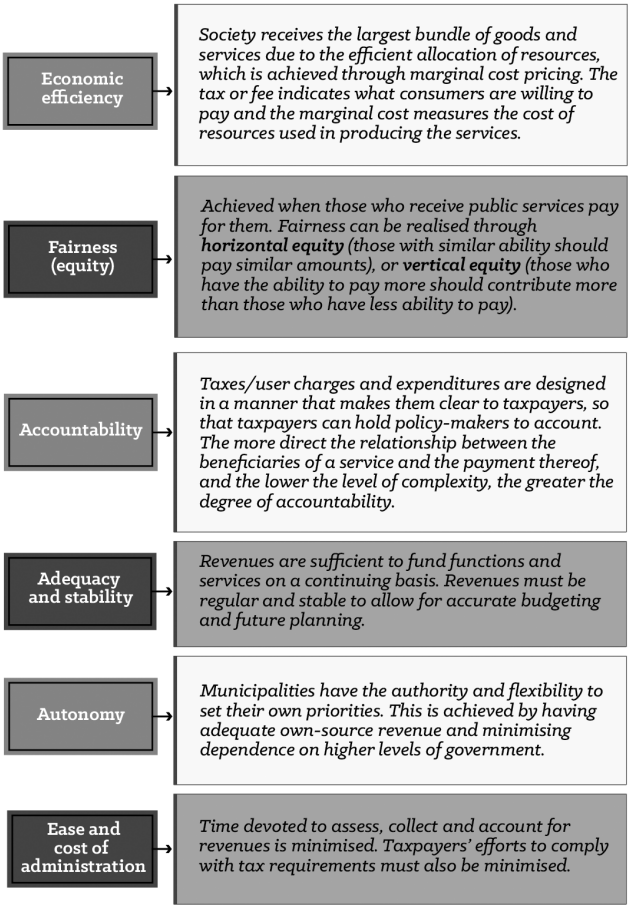


Figure 1.2: Public Finance Principle for Local Government Revenue

In most cases, the extent to which local government can use funding sources rests with national government. For example, the South African Constitution (1996, Section 228–230) allows provincial government to impose taxes, Value Added Tax (VAT), and general sales tax to fund its activities, but these forms of taxation are specifically excluded for municipalities. Thus, by extension in this context, the lower the level of financial self-sufficiency, the greater the ability of central government to influence how funds are prioritised and allocated. However, urbanisation in developing countries is unlikely to increase municipal revenues by a commensurate amount, because the income elasticity of existing taxes is bound to decrease as unskilled and semi-skilled people migrate to urban areas (Bahl & Linn, 1992).

In truth, fiscal decentralisation policies put forward in the 1980s to improve service delivery and reduce poverty (Slack, 2009, p.14) had two consequences:

1. Central and provincial functions were offloaded or downloaded to local government, along with budgetary authority, but almost always without taxation authority, which central government retained; and
2. As a result, revenues under local government control rarely matched expenditures (Slack, 2009; Bird, 2001 & 2011).

We now consider each of the revenue sources individually.

Property Taxes

Universally, the most popular municipal tax instrument is property taxation. Depending on how the property tax is applied, it can be regressive or progressive,[2] but only marginally so. Advantageously, property taxes are inexpensive to collect, uniform in their application, and easily understood by residents, as they target landowners who are likely to be more affluent. The tax does have several weaknesses, though:

1. The register must be updated regularly, as property prices fluctuate;
2. Homeowners' ability to pay cannot be assumed; and
3. Households may be asset-rich but cash-flow poor, such as those of pensioners (Solomon, 1983; AMEU, 1995; Mawhood, 1993; Reynolds, 2004; Van Ryneveld, 1990).

Excessive taxation may also result in tax evasion, reduced building activity, relocation to where taxes are lower (disinvestment) – as occurred in Johannesburg in the early 1990s (which we will explain in later chapters) – or even a loss of electoral support, as Margaret Thatcher found out in the British poll tax debacle of the early 1990s.

Ideally, municipalities should have a mix of taxes. This provides more options and greater flexibility to respond to changes in the economy, to expenditure needs, political imperatives and other factors. Additional taxes, subject to central government approval, then include:

- Personal income taxes;
- Corporate income taxes;

- Payroll taxes (such as the RSC levy which was abandoned by National Treasury [NT] in South Africa in 2005);
- General consumption taxes;
- Vehicle taxes; and
- Hotel occupancy taxes.

Bird (2000) identified six characteristics of a good local tax. Table 1.3 compares these against both older (Moak & Hillhouse, 1975) and more recent global assessments (Martinez-Vazquez, 2015) as well as an analysis undertaken by Bahl & Smoke (2003b) specifically on the South African sub-national revenue system. The big time gaps between the different studies are deliberate and useful in that they show that academic thinking on this issue has largely not evolved over time.

Table 1.3: Characteristics of a Good Local Tax

	Moak & Hillhouse (1975)	Bird (2000)	Bahl & Smoke (2003)	Martinez -Vazquez (2015)
The tax should be relatively immobile so that local governments can vary the tax rates without losing a significant portion of the tax base		√		√
Buoyancy – rates changing in proportion to the economic base	√		√	√
The tax yield should be adequate to meet local needs, increase over time as expenditures increase, and be relatively stable and predictable	√	√	√	Implied
The tax should not be one that is easy to export to non-residents		√	√	√
The tax base should be visible to ensure accountability		√		√
Taxpayers should perceive the tax to be reasonably fair (equitable)	√	√	√	√
The tax should be relatively easy to administer	√	√	√	√
The tax should be relatively efficient, causing low distortions in economic activity				√
The tax should be politically acceptable	√		√	√
The tax should not interfere with domestic or national commerce (it should be neutral)	√		√	√

Source: *Martinez-Vazquez, 2015; Bird, 2000; Bahl & Smoke, 2003b; Moak & Hillhouse, 1975*

User Fees or Charges

When looking at user fees as an income stream, a key consideration is that utilities are usually constructed and developed by central government, and not local government. This is due to, amongst other things:

- The high levels of capital required;
- Cost reduction through economies of scale;
- Integrated planning of regional or national supply; and
- The need to assure standardisation.

A significant additional benefit is central government's ability to cross-subsidise urban-rural tariffs, with rural tariffs being considerably higher per resident. Within this context, income from municipal distribution in developing countries is categorised by an implicit system of cross-subsidies from high- to low-usage households through block rates,[3] while industrial and commercial users (load pricing)[4] subsidise residential users (Bahl & Linn, 1992).

The World Bank deemed this inefficient, as under-priced services encourage over-consumption and waste – economic efficiency and not revenue generation should be sought – and on this basis it promoted the privatisation of public utilities (World Bank, 1988). Such a transition had to be managed carefully, however, as the removal of free or subsidised services would at times misguidedly be viewed as a pure "revenue-grab". Then, in the absence of privatisation, municipalities needed to generate surpluses from electricity distribution, as it was a practical and reliable source of revenue, but they needed to comply with the abovementioned tenets of economic efficiency. Conversely, More (1999) argues that where there are high levels of inequality, a user fee, regardless of the level it is set at, excludes those at the margin. Public goods and services are meant for all residents, and equity should be prioritised over efficiency, by adopting a functionalist approach.

Looking back, Kessides et al. (2009) assessed the impact of privatisation and market-liberalisation reforms, under the neo-liberal approach of cost-reflective tariffs, on the affordability of public-utility services for low-income households in developing countries. In analysing 20 years of the effects of privatisation policies, the study found that the impact on the poor was grossly underestimated. More than anything, it meant that taxpayers defaulted on higher taxes not so much because they were unwilling to pay, but because they were not able to. The report concluded that an effective affordability analysis

must be an integral part of every utility's reform programme, especially during economic downturns.

Finally, with both taxes and user fees available as funding options to local government, it is useful to remember that albeit their similarity – in that proceeds are used to fund public-sector functions and services – they are different. Here, simplistic examples, such as personal tax (to fund general public-sector activities) and a parking entrance fee (to offset direct costs) are transparent, easy to understand, and therefore easily accepted. Confusion and outrage arise when proceeds are indirect and opaque, such as an excise tax on plastic packets to fund environmental programmes. As Duff (2004) summarises: "Benefit taxes and user fees are just one additional mechanism for government to raise revenue; and when used appropriately can deliver efficiency, accountability and fairness. They can however become regressive when used for pure public goods and redistributive transfers."

National Transfers

If denied access to a wider range of revenue instruments, local government is legitimately entitled to a portion of national revenues through infrastructure grants and an equitable share arrangement. And the manner in which the share is calculated is often intended to address specific weaknesses and shortages; particularly given that the burden of providing for the poor who cannot afford services is unevenly distributed between municipalities. It is for that reason that this approach was adopted in South Africa, with the 1996 Constitution mandating local government to deliver specific services and functions, and then allocating an equitable share of national revenue to it. The formula – designed to be objective, transparent and beyond manipulation – is purposefully skewed towards smaller municipalities, which have a lower revenue-collection potential (as the poor cannot afford to pay for services, let alone taxes); and also to provide the poor (not all of whom are indigent) access to basic services (see FFC, 2012; NT, 2017).

Of course, while centralising revenue collection may have the advantage of simplifying taxation for government and citizens, it more often than not compromises local government, as it creates a level of dependence through national transfers, which tends to serve the priorities of national, not local government.

Direct Borrowing

As cities grow, so does the need for capital infrastructure projects. It

is therefore necessary for central government to permit sub-national government to develop an effective borrowing mechanism, controlled through clear rules (Martinez-Vazquez, 2015).

1.4.3 THE SOUTH AFRICAN MODEL

Apartheid inhibited the movement of people, but after its fall, there were high urbanisation rates. This was expected, as was the pressure it would place on municipal revenue. It was less obvious, however, as to how the effects of this could be mitigated. South Africa, which received significant technical and advisory support from the World Bank and International Monetary Fund (IMF) from 1990 on (Seekings & Nattrass, 2015, p.7), espoused a neo-liberal economic approach. It adopted business-friendly policies, which it was believed would ultimately lead to competitive markets and efficiencies, and in turn to greater prosperity. At municipal level, the proposed approach entailed:

- Privatising or outsourcing functions;
- Forging private-public partnerships;
- Focusing on cost recovery and value for money, and on customers rather than on citizens; and ultimately
- Focusing on promoting competition – which if introduced for services (electricity being a prime candidate), would decrease prices and make them more accessible to the poor.

Fiscal decentralisation also required maximising local revenue collection, to provide a level of independence from central government, which in turn strengthened democratisation. It would also afford the financial means for local government to execute its mandated functions, as well as greater transparency that allowed constituents to hold office bearers to account. Simultaneously though, local government's limited capacity to directly raise revenue, coupled with central government's overarching objective to maximise municipal self-reliance, created very particular tensions, many of which we will see playing out in the research that follows.

Notes

1. The next chapter explains the government model adopted under the South Africa Act of 1909, which allowed for the continuation of municipal councils (Point 92, p.3) and which made their decisions binding unless

"varied or withdrawn by Parliament of provincial council" (Section V, Point 93). Additionally, municipalities were directly accountable to their respective provincial councils (Section V, Point 85 [vi]). These institutional arrangements meant that municipalities did not have direct access to national government and had to go through provincial structures.

2. A progressive tax is defined as one whose rate increases as the payer's income increases. That is, individuals who earn high incomes have a greater proportion of their incomes taken to pay the tax. A regressive tax, on the other hand, is one whose rate increases as the payer's income decreases.
3. With increasing block tariffs, the rate per unit of electricity increases as the volume of consumption increases. Consumers face a low rate up to the first block of consumption and pay a higher price up to the limit of the second block, and so on until the highest block of consumption.
4. This is a pricing strategy wherein the service provider charges a higher price during peak demand times. Peak-load pricing allocates the cost of capacity across several time periods when demand systematically fluctuates.

CHAPTER 2.

THE EVOLUTION OF GOVERNMENT ADMINISTRATION IN SOUTH AFRICA

"The National Party is well aware of the enormous power wielded by a highly centralised state and is deeply concerned about the black majority assuming control of such an apparatus." — Bekker in Heymans & Tötemeyer (1988, p.30)

2.1 INTRODUCTION

Municipal ESI developed in South Africa in the context of how government, and local government in particular, changed over time. This chapter thus traces the evolution of government in the country in order to provide context and an overview for the detailed analyses in later chapters. In this chapter, we look at the overall fortunes of local government during the three time periods selected for this book. We identify the prevailing national political dynamics for each period, together with how policy decisions were delegated to local government. We also assess the impact of these policy decisions on local government and the response to them. Throughout, we see how the consequences of decisions and actions taken at the higher level impacted local government.

2.2 GOVERNMENT PRIOR TO 1910

In South Africa, local government with an elected council goes back as far as 1836, but its forms evolved differently, depending on particular

British and Dutch influences (Tsatsire et al., 2009). Local government was initially influenced by the Dutch[1] (1652 to 1795 and 1802 to 1806) and then by the British (1795 to 1802 and 1806 to 1910), both of whom left deep impressions on the tradition and structure of local government. The former deeply impacted the system of rural and early town government, while the British influenced the development of urban municipal government, starting in the Cape Colony and spreading to Natal, Orange Free State and Transvaal. Vosloo et al. (1974) identify three forms of government during this period – rural, town and municipal. For our purposes, we limit our analysis to municipal.

The Anglicisation of institutions properly began with the British re-occupation of the Cape Colony in 1806 (see endnote 1). The Cape Municipal Ordinance was passed in 1836, which set up local government for towns in the form of a board of commissioners elected by households for a period of three years. Rates were levied annually by a public assembly. The Ordinance was essentially a framework within which municipal regulations were drawn up for differing organisations and powers, to meet the needs of each municipality. This home-rule measure allowed each local community to frame its own constitution in accordance with its own circumstances. The Ordinance was adopted by Natal (1847), and with minor variations, even by the two Boer Republics – Orange Free State (1856) and Transvaal (1877). Since it borrowed heavily from the British Municipal Corporations Act of 1835, it formed the basic framework for the subsequent introduction of typically British terms and practices such as mayor, town clerk, councillors, standing-committee systems, by-law powers, and the concept of a "municipal corporation".

2.3 THE UNION OF SOUTH AFRICA (1910–1948)

The South Africa Act of 1909 was an act of the British Parliament to create the Union of South Africa by merging the two Boer Republics (Orange Free State and Transvaal), which it had defeated in the Anglo-Boer War, with its two colonies (Cape and Natal). The Act allocated national government executive authority over provincial government, which in turn presided directly over local government (Government of South Africa, 1909, Section 85 [vi]).

2.3.1 CENTRAL GOVERNMENT

Central authority was vested in the national legislature (Parliament),

its executive institutions and the judiciary. Based on the British Westminster system, Parliament was the sovereign legislative authority. The courts were not empowered to test the validity of parliamentary legislation adopted by constitutionally prescribed procedures. The House of Assembly was by far the most important unit in the legislative structure, with bills that appropriated revenue or imposed taxation. The political party with majority support gained control of the entire governmental structure. The judiciary was established and functioned in terms of acts of Parliament. Court hierarchy consisted of appellate, provincial, local and circuit divisions of the supreme courts, as well as special courts and a variety of local courts for the various magisterial districts, together with special courts for "Bantu"[2] matters (Vosloo et al., 1974).

The National Convention of 1908, to formulate consensus on the formation of the Union of South Africa, came under severe strain regarding the issue of non-white political rights. The Cape supported the extension of franchise rights to non-whites, but the other three future provinces of the Union favoured the restriction of all rights. The existing status quo was maintained in each province, on condition that the United Party would not permit non-white electoral candidates (Vosloo et al., 1974, p.33). This formalised racial segregation and entrenched it from thereon. For example, the Natives Land Act of 1913 limited black people to owning land in designated "reserves" which only made up 7% of the country. The allocation was increased to 13.7% in 1936 (Cameron, 1993, p.418). The Native Affairs Act of 1920 then created tribal-based district councils. The Natives Urban Areas Act of 1923 regulated the presence of black people in urban areas by creating townships[3] on the outskirts of towns. This was followed by the Local Government Act of 1926 denying citizenship rights to Indians (followed by an unsuccessful effort to repatriate them in 1927). Then, the Native Trust and Land Act of 1936 created African reserves, effectively formalising white and black rural areas (South African History Online, 2011).

2.3.2 PROVINCIAL GOVERNMENT

The provinces were a new creation under the Union. Provincial government, which was the second tier of government beneath central government, was created by the South Africa Act of 1909. Even though the Cape, Natal, Orange Free State and Transvaal retained their borders after the Union, they in no way kept any of their legislative powers. Provinces were designated specific functions and administrative duties

by central government (Cloete, 1978, p.3), including managing schools, hospitals, roads and local authorities.

To fulfil their mandate, provincial governments were given legislative authority, but their ordinances would only be of effect if they were not "repugnant" to an act of Parliament (Government of South Africa, 1909, Section 86). The state president appointed an administrator for each province. The Provincial Administrator's ultimate responsibility was to ensure policies applied were in line with those of central government.

2.3.3 LOCAL GOVERNMENT

The formation of the Union brought together two colonial systems: Dutch and British. To simplify matters and promote co-operation, it was decided to retain the existing system of local government, which would henceforth fall under provincial government. Central government would from time to time pass acts impacting on local government, particularly regarding racial segregation, but ultimate control remained with provincial government. To manage local government, each province would pass local government ordinances that provided directives regarding the powers and duties of local authorities. All provincial ordinances were subject to the approval of central government. By-laws were subject to the approval of the Provincial Administrator. Under this structure, central government could control local government affairs without dealing with local government directly. Provincial government controlled how local government levied taxes, borrowed money, handled accounting procedures and appointed key personnel. Capital projects had to report to central Treasury.

Period Summary

Although the Union of South Africa introduced three levels of government, it was a unitary form of state, where central government had supreme power over the entire territorial state. Under this system, all other levels of government were subordinate – owing their creation and continued existence to central government – with the powers they possessed determined by it (Hanekom in Heymans & Tötemeyer, 1988, p.17). This centralised approach would be tightened even more as the National Party (NP) implemented its political and economic ideology.

2.4 THE RISE AND FALL OF THE NP AND ITS GRAND APARTHEID PROJECT (1948–1994)

2.4.1 CENTRAL GOVERNMENT: NP's POLICY OF SEPARATE DEVELOPMENT

The rise of Afrikaner nationalism was marked by the accession to power in 1948 of the NP, based on its apartheid manifesto to formalise "separate development" along racial lines. Apartheid now contemporised, extended and codified racism in the context of a modern state.

With the NP essentially enjoying uncontested rule from thereon, a key consequence was that the Executive's authority over time began superseding the legislature's. Under the Westminster model, final authority lies with a sovereign parliament, but gradually Cabinet came to initiate all decisions, with Parliament simply endorsing them. By the 1980s, decision-making was highly centralised and effectively limited to the few securocrat members of the State Security Council (SSC) reporting directly to State President P.W. Botha, who also controlled access to the SSC. Before ending in 1994, the NP's administrative rule can be broken down into three phases, which we examine next.

Phase 1: Segregationist Policies (1948–1960)

The main aim of segregation was to achieve maximum separation between whites and non-whites. This was brought about by three supporting objectives:

1. To prevent further biological integration of the different races;
2. To regulate points of contact amongst races; and
3. To ensure total domination of the political system by excluding all non-whites from it.

The almost-endless list of punitive and inhumane laws targeting black people had significant negative financial, logistical and social implications for local governments, who were required to enforce them with impunity. This was to have long-lasting and huge consequences for local government in future, placing it under immense pressure to integrate hitherto under-serviced black areas when these were subsumed into neighbouring previously "whites-only" municipalities under South Africa's first democratic government.

Phase 2: Developmental Phase (1960–1976)

Having excluded non-whites from all spheres of political, economic and public participation, the NP government turned its attention to creating alternative opportunities for them. The objective of this developmental phase was to create separate and subordinate national and local institutions for all non-white groups. The aim was then to build social and economic development areas within the territories non-whites were assigned to live in, which were called homelands, or Bantustans. To facilitate (false) "independence", the people who were "transferred" to the homelands lost their own land, country and citizenship – essentially becoming foreigners in their own country. This was the primary difference between apartheid and segregation, as even in the USA natives who were clustered into Indian reserves were never excluded from their US citizenship.

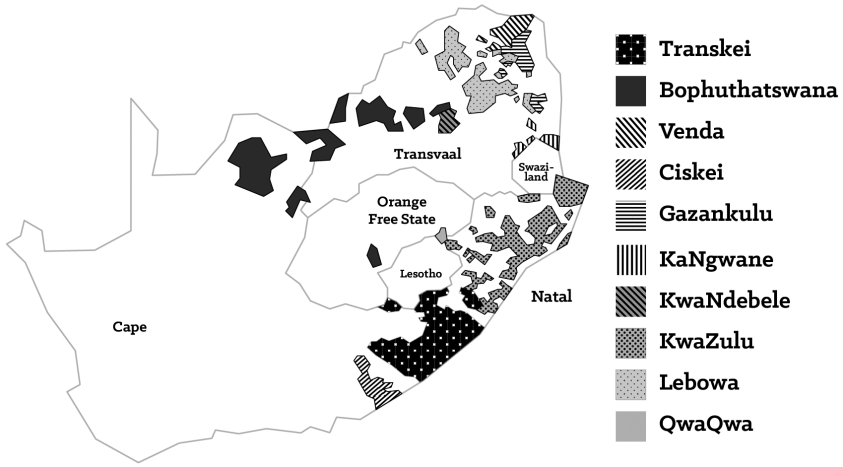


Figure 2.1: Map of South Africa Before 1994, with Homelands

During this period, the South African economy experienced high growth, with annual GDP growth between 6 and 8% during the 1960s.

The Soweto Riots (beginning on 16 June 1976) then provided a decisive historic turning point. Government finally realised that the Verwoerdian[4] myth of all Africans being "temporary sojourners" in white urban areas was untenable (Lemon in Smith, 2002, p.5). The economic and political costs of government policies were now evident, and to find solutions, several commissions of inquiry were formed. Tellingly, the Committee of Inquiry into the Finances of Local Authorities (Browne, 1980) distinguished between the "need to pay"

and the "ability to pay" for municipal services amongst the three population groups, where White Local Authorities (WLAs) generated large surpluses, while coloured and Indian authorities did not – with little prospect of the situation improving over the 12-year forecast period to 1990.

In this, the Browne Inquiry distinguished itself from previous government reports, not because it noted the failure of the system, but because it formed the basis for the creation of Regional Services Councils (RSCs), detailed further on. Prior to Browne, the failure of the separatist system had been analysed but only noted by previous official inquiries, as an admission thereof would have challenged racial segregation.

Phase 3: Neo-Apartheid (1976–1994)

Under increasing international and local pressure to reform, and to stabilise the country, the NP realised that both political and economic changes were necessary. It acted by formally acknowledging and accepting recommendations for the maximum devolution of power to local authorities as a policy priority. Based on the findings of the Theron Commission (1976), reform was introduced through the Republic of South Africa Constitution Act of 1983, which abandoned the Westminster system and introduced the Tricameral Parliament, providing limited power-sharing to Indians and coloureds. Black people were excluded.

Having excluded the black population from the Tricameral system, but simultaneously recognising and accepting that they were permanent inhabitants in "white" areas, far-reaching reforms were introduced to change their status within urban areas (Christopher, 1997, p.318). Prior to 1982, black urban townships were administered by the national government's Bantu Administration Board and provided limited services. As part of government's reform process, where devolution became a priority, Black Local Authorities (BLAs) were created through the Black Local Authorities Act of 1982. These supposedly replicated the government structures administering white areas, so in theory were granted the same powers and authority. BLAs were now required to operate on a cost-recovery basis, i.e., the principle of financial self-sufficiency applying to all local authorities (Cameron, 2002; Bekker & Jeffrey, 1989; Solomon, 1983; Horowitz, 1994). But to finance themselves, WLAs raised revenue from property taxes and the provision of services such as electricity, water and garbage removal. National grants provided as little as 4.2% of capital and operational

expenditure in 1978 (Solomon, 1983, p.28). This was not possible for BLAs for two reasons:

1. They had almost no existing infrastructure from which to raise revenue; and
2. Their residents (under apartheid) had very limited financial means.

As a result, BLAs resorted to significantly increasing rental and service charges. In response, residents protested, boycotted payments, and there was violence in many areas. Here, non-payment was not only an affordability issue, but also a form of political protest; with residents viewing BLAs as politically illegitimate (Tsatsire et al., 2009, p.137; Heymans & Tötemeyer, 1988; Poto in Heymans & Tötemeyer, 1988, p.101). Numerous black councillors resigned and many BLAs collapsed (Cameron, 2002, p.117).

To support BLAs, a regional services levy and a regional establishment levy were introduced. These were to be paid by white affluent commercial and industrial sectors and eventually became the basis of funding for the RSCs (Smith, 2002, p.4). RSCs were created in 1985 to serve as "proto-metropoles" made up of both WLAs and BLAs. Ultimately though, national government's obsession with separate development led to the unnecessary duplication of infrastructure, services and manpower between WLAs and BLAs; all of which was iniquitous, inefficient and expensive. The reforms did not appease non-white citizens, and there was a marked escalation in political resistance, popular and violent township protest, and rural uprising. P.W. Botha resigned in August 1989, and F.W. de Klerk, already the leader of the NP, won the national elections that took place 23 days later, becoming state president in September 1989. Just four months on, he announced wide-ranging reforms effectively ending apartheid; heralding the country's first democratic elections in April 1994.

The NP government immediately sought to reform local authorities. When De Klerk realised the country's major (white) cities would be significantly larger once the townships were incorporated, he expanded the existing committee of inquiry, led by Dr Christopher Thornhill from 1989, that was investigating the total system of local government. A second report was also commissioned. The report identified five possible models, but by this time, the country was gearing up for its first democratic elections, and the findings were *noted and shelved* (Cameron, 1993). Dr Thornhill[5] rejected this view, stating that the findings formed the basis of the Local Government Transition Act (LGTA) of 1993,

which ultimately led to local government becoming an independent sphere of government.

Period Summary

One of the final acts of the NP government may have been to eventually realise its long-held policy ambition of decentralising power to local government. Indeed, the extent to which the ruling party was sincere about decentralisation in the early- to mid-1980s may never be known, because it was in a constant state of national crisis defending apartheid. Thus, all reform measures came with central government veto power, which immediately generated mistrust, insincerity and legitimacy issues. As Bekker (in Heymans & Tötemeyer, 1988, p.30) put it: "The National Party is well aware of the enormous power wielded by a highly centralised state and is deeply concerned about the black majority assuming control of such an apparatus." In the final analysis, government's decentralisation programme was designed by the NP in an elitist fashion, to ensure that although it shared power, it retained control (Cameron, 1995, p.412). At the end of the day, the programme delivered little devolution and was limited to deconcentration and delegation (Cameron, 2002, p.119).

2.4.2 PROVINCIAL GOVERNMENT – TOEING THE (NATIONAL) PARTY LINE

After winning the 1948 elections, the NP immediately focused on consolidating its position by centralising state control. Provincial government was restructured to comprise three elements: a Provincial Administrator; an executive committee; and a provincial council. The Administrator was appointed and dismissed by central government. Provinces presided over local authorities, who they regulated and controlled through provincial ordinances (Young, 1990, p.223). This structure again allowed national government to have its policies implemented with minimum interaction between it and local government. Fundamentally, the Provincial Administrator was local government's decision-maker.

Provinces also oversaw local government finances, where strict control was exercised in line with national government requirements. This did not mean that provinces enjoyed any additional privileges though. Total power resided in the centre, and all provincial taxing abilities were curbed, making provinces almost exclusively reliant on funding transfers from national government. An additional example of

national government constantly undermining its stated policy priority of devolution was the decision by National Treasury (NT) to supplant the provincial authorities in their oversite role of local government finances in the mid-1980s – citing local government inefficiency as the key reason, which if left unchecked could lead to excessive inflation that could "break the back of the economy" (Cameron, 2002, p.119).

2.4.3 LOCAL GOVERNMENT – WLAs

To deliver on its election manifesto of separate development – which had to in effect be implemented at local government level – the NP moved quickly to centralise the powers and functions of local government even further. Existing regulations were repealed and replaced with new legislation to separate the different cultural groups. This side-lined the few non-white councillors in the Cape Province.

A policy of preferential access to jobs for white Afrikaners was put in place. This resulted in a gradual deterioration in the capacities and skills of the civil service, as powers were given to increasingly incompetent and less-qualified personnel. At the time, Afrikaners were (significantly) less educated than their English-speaking white colleagues. The NP's policy of job reservation therefore successfully evicted English speakers, leading to a mass exodus of experienced and skilled people. This was reflected in the AMEU conference minutes during this time, which noted that experienced staff considered taking positions at municipalities in Southern Rhodesia (AMEU, 1950–1960).

In 1961, South Africa seceded from the British Commonwealth and issued a new Constitution that retained the existing levels of government. Control of local government remained under Provincial Administrations. Each local government had its own ordinances. By the 1970s, the objectives and functions of a typical large municipality in South Africa could be grouped into four categories:

- Social objectives (preventative healthcare [such as inoculations and health awareness], garbage removal, parks, firefighting, etc.);
- Physical objectives (housing services, town planning, water and electricity);
- Financial objectives (revenue collection, budgets); and
- General objectives (training).

Minor differences between cities remained. For example, Johannesburg

operated a municipal public-transport service, which is still in effect, whereas Cape Town always outsourced the function.

Notable omissions from the list of functions were education (primary, secondary and tertiary), hospitals (including child welfare, healthcare for addicts, and care for the aged) and policing. Table 2.1 lists the non-municipal functions in 1977 and shows which level of government was responsible for them. This arrangement remained intact until the 1996 Constitution, which came into effect after the country's first democratic elections and is covered in greater detail in later sections.

Table 2.1: Non-Municipal Functions (1977)

Function	Responsibility
Primary and secondary education	Provincial government
Tertiary education (colleges and universities)	National government (Department of National Education)
Hospitals	Provincial government **Note:** Preventative healthcare, including inoculations, awareness, etc. was the responsibility of local government
Hospitals (welfare)	National government (Department of Social Welfare)
Policing	National government
Abattoirs	Provincial government
Non-white race groups	Matters dealt with exclusively by each respective national (homeland) government as per central policy

Source: *Adapted from Hammond-Took (1977)*

2.4.4 LOCAL GOVERNMENT – BLAs

The Natives Urban Areas Act of 1923 allowed for segregated urban areas and required black advisory committees to advise WLAs responsible for administering black townships. The black advisory committees had no powers to act, and all decisions affecting the townships were made jointly by the township's WLA and the national Department of Native Affairs.

In 1971, national government took the administration of the councils away from WLAs and gave it to the newly created Bantu Affairs Administration Boards, which black councils had the option of joining. Taxation and finance remained with WLAs, meaning that townships

had very limited economic activity and thus little revenue to build infrastructure and provide services. The black community in the townships mobilised in protest, and the black civic organisations that had by now formed, successfully convinced residents not to pay rent or service charges, making townships financially unsustainable. Finally, national government introduced BLAs (through the Black Local Authorities Act No. 102 of 1982). These reported to their respective Provincial Administrators, with policy in the form of legislation coming from central government, and the principle of financial self-sufficiency applying.

The eventual formation of RSCs through the Regional Services Councils Act of 1985, to cross-subsidise infrastructural development in BLAs through levies imposed on commerce and industry in WLAs, and to co-ordinate supply of services, now meant that RSC levies could be used to fund 21 functions. These included bulk water and electricity supply, sewerage, roads, and the maintenance of infrastructure, services and facilities. The tax rates charged were determined by the Minister of Finance, and it was compulsory for each RSC to spend the proceeds on specific functions – prioritising areas where the greatest need existed, i.e., black townships (Cameron, 1993; Heymans & Tötemeyer, 1988; Smith, 2002; Bekker & Jeffrey, 1989; Solomon, 1990).

As the *Financial Mail* put it: "Perhaps the most important result of this Act will be an effective redistribution of income, wealth, development and influence in a region from white to black, coloured and Indian communities, with the direct participation of these communities."

Indeed, RSC revenue did provide funding for much-needed infrastructure in the areas where it was lacking most, and was effective in that over 80% of the annual budgets of the various RSCs were spent in black areas (Cameron, 1993, p.424). However, problems persisted. The inability of BLAs to generate meaningful revenue meant that a greater proportion of the funding had to be allocated to subsidise BLA operations, or more accurately, to keep bailing them out, which reduced capital infrastructure spend. Regardless of these drawbacks, the RSC mechanism proved to be resilient, and levies used to fund local government were only eliminated in 2005.

2.5 A NEW CONSTITUTION, SPHERES OF GOVERNMENT AND DEMOCRACY (1993–1996)

By 1990, the NP had committed to democratic elections and the negotiation of a new constitution with all political parties. The Interim Constitution was then negotiated in 1992 and 1993 to support the

transformation period needed to end apartheid, and provided the basis for the Final Constitution.

2.5.1 INTERIM CONSTITUTION

The NP insisted on constitutional power-sharing to protect minority rights – allowing for a Government of National Unity (GNU), wherein political parties gaining more than 20 seats in the National Assembly would receive Cabinet seats. The GNU was formed after the April 1994 national elections and would exist until the Final Constitution had been agreed. The Interim Constitution made provision for a three-tier system of national, provincial and local government. Under it, there were now nine provinces instead of four.

In many ways, the NP's strategy to protect minority interests, and more specifically its white electorate's interests, was manifested through maximum decentralisation to local government. Realising that it would lose the national elections, the NP recognised that winning local elections in existing and economically influential WLAs would result in strong local government that could provide some checks and balances to a black-controlled government. Conversely, the ideology of the ANC called for a highly centralised approach, which it believed was a more effective form of administration and was seen as a mechanism more likely to ensure redistribution of wealth and the reversal of apartheid inequities.

2.5.2 FINAL CONSTITUTION

> This Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled. (Constitution of the Republic of South Africa, 1996, Chapter 1: Section 2).

The Final Constitution adopted the principle of co-operative government (Chapter 3: Section 40), where government consists of three spheres (national, provincial and local) which are "distinctive, interdependent and interrelated".

Section 156.1 gives local government the executive authority to administer services listed in Part B of Schedule 4 and Part B of Schedule 5, which include electricity and gas reticulation (Schedule 4, Part B). The net effect was that local government now has constitutionally guaranteed functions; with electricity reticulation[6] being one.

Although provision was made for inter-governmental grants from

national to provincial and local government, the principle of self-financing for local government was maintained. Section 229 ("Municipal fiscal powers and functions") thus allows municipalities to impose: "a. rates on property and surcharges on fees for services provided by or on behalf of the municipality"; and, "b. if authorised by national legislation, other taxes, levies and duties appropriate to local government …".

But no municipality may impose income tax, VAT, general sales tax or customs duty.

2.6 NEW BEGINNINGS? (1997–2014)

2.6.1 ESTABLISHING DEMOCRATIC AND DECENTRALISED LOCAL GOVERNMENT

Removing well-entrenched, decades-old structures was not seen as a straightforward task. Communities, services and local government skills were clustered along racial lines. Transforming local government would require the demarcation of municipal boundaries to make them inclusive and representative, and in order to redistribute political power. Such a process would inevitably result in winners and losers, making it a highly emotional and contested issue.

2.6.2 RECONSTRUCTION AND DEVELOPMENT PROGRAMME (RDP) AND GROWTH, EMPLOYMENT, AND REDISTRIBUTION (GEAR)

The RDP was adopted by the GNU after the 1994 elections, to be implemented by civil society in addressing issues of social inequality and justice. The plan was structured to balance, on the one hand, the funding needed to pay for urgent and very necessary reconstruction and development, and on the other, the imperative of growing the economy to provide the financial resources needed to pay for the programme.

Just two years later, the ANC introduced the GEAR initiative, whose stated objective was to build on, and not replace, the principles of the RDP (Manuel, 2006; Gelb, 2006, p.2). This viewpoint has however been hotly debated, with GEAR seen as having a far more centrist economic foundation and being yet another, further, move away from the ANC's left-of-centre ideology (Weeks, 1999, p.796). GEAR's five-year programme targeted a GDP growth rate of 6% in its final year, with an average of 4.2% over this period (1996–2000) – the minimum rate

needed to construct a competitive economy required to create 400 000 jobs per annum, address inequality and extend service delivery. The economic policy of GEAR explicitly emphasised:

- Fiscal austerity;
- Deficit reduction;
- Pegging taxation and expenditure as fixed proportions of GDP;
- Cutting back on government consumption expenditure; and
- Keeping wage increases in check.

The state would henceforth play a stronger role in co-ordinating fiscal and budgetary policy. Over its five-year duration, GEAR would reform accounting practices, financial management and the budgetary process and intergovernmental fiscal system. Capital payments to municipalities were fused into the Consolidated Municipal Infrastructure Programme (1996) and the equitable-share formula for local government, introduced in 1998, was to be used to fund the roll-out of services to indigent households.[7] At the time, changes to municipal finance under GEAR were introduced simultaneously with the drafting of the White Paper on Local Government (Powell, 2012; Weeks, 1999).

2.6.3 GREEN AND WHITE PAPERS ON LOCAL GOVERNMENT

Introducing democracy to local government would require a complete overhaul of the existing system. This could not be achieved all at once, and certainly not in a fragmented and dysfunctional system. In order for negotiations to take place, stability had to be maintained, so it was essential that service provision continue. To this end, a five-stage process was envisioned:

- **Stage 1** would involve formulating the overall vision, goals and direction of key issues;
- **Stage 2** would require the relevant ministry to formulate green and white[8] papers;
- **Stage 3** would necessitate that the Green Paper be debated in Parliament; and with consensus, a white paper would be issued by the ministry;
- **Stage 4** would involve the appropriate ministry formulating the law (bill) to achieve the White Paper policy objectives; the draft

bill would then be reviewed by Parliament, the public and Cabinet; and only when the final bill was signed by the president, would it become law; and

- **Stage 5** would entail the implementation and/or subordinate legislation providing further detail; with all three spheres of government responsible for implementing government policy.

The Green Paper on Local Government was released in October 1997 and the White Paper just five months later, in March 1998, with the short timeframe between the two pointing to the envisioned approach being compromised. We now look at the two primary outcomes before assessing the White Paper itself.

Developmental Local Government

Four developmental outcomes were identified:

1. The provision of household infrastructure and services;
2. Creation of liveable integrated cities, towns and rural areas;
3. Local economic development; and
4. Community empowerment and distribution.

The first outcome dealt with the traditional functions of local government – service delivery – while the remaining three were new additions. The White Paper's intention on services (Ministry of Provincial Affairs and Constitutional Development, 1998, p.27) is of primary relevance to this study and is therefore interrogated in more detail.

The Paper's priority and starting point was the provision of basic services to those who had little or no access to them. The envisaged funding for these capital projects would come from grants from the consolidated municipal infrastructure programme, cross-subsidisation of existing services, and private-sector involvement. Operational costs would be financed from the equitable share of national revenue to which local government is entitled. To ensure sustainability, the level of investment would need to match the ability of the various communities to pay for these services.

Achieving the four developmental outcomes would require significant changes, and the White Paper identified three interrelated approaches to assist municipalities:

1. Integrated development planning and budgeting;
2. Performance management; and
3. Working together with local citizens and partners.

The first tool, integrated development planning, is a mechanism for short-, medium- and long-term planning. Integrated Development Plans (IDPs) are incremental plans which recognise that not everything can be planned in year one and that circumstances change. They also provide a comprehensive framework for municipalities to identify and plan their developmental mandates. In addition, the White Paper unequivocally states that IDPs must be developed and managed internally so as to strengthen strategic planning, build organisational partnerships between management and labour, and enhance synergy between line functions.

The second tool, performance management, then seeks to ensure that the plans being implemented are having the desired impact and that resources are used efficiently. Both national (fixed) and local (relevant) key performance indicators are proposed, providing national government with an assessment tool of how local government is performing.

The third and final tool, working with local citizens and partners, is a key tenet of decentralisation; and here, four different levels of interaction with the electorate and stakeholders were identified:

1. Political accountability (voters);
2. Input into planning processes (citizens);
3. Quality and affordable services (consumers); and
4. Mobilising resources and providing assistance (partners).

Co-operative Government

The White Paper reinforced local government's elevation to a sphere of government; no longer subordinate to, and a function of, national and provincial government. The Paper recognised the complex nature of government and the need to strike a balance between independence and co-operation. National policies from various ministries were summarised, the most relevant of which for this book was the one provided for the then-Department of Minerals and Energy (DME). The proposed transformation of the electricity industry was noted. More specifically, how this reform would impact on municipal and Eskom reticulation activities was recognised:

- Eskom and MEUs were distributing to different parts of the same municipality;
- Municipalities were losing their licences, as they were not paying Eskom for their bulk electricity supply accounts;
- The envisaged Regional Electricity Distributors (REDs) would combine Eskom and municipal reticulation into autonomous structures; and
- The extent to which municipalities – especially larger ones – relied on electricity sales for revenue and cashflow was recognised, thereby acknowledging the established practice of cross-subsidising non-viable municipal services from "municipalities' profits on electricity supply" (Ministry of Provincial Affairs and Constitutional Development, 1998, p.45).

To compensate for any potential loss of revenue from restructuring, the White Paper envisaged that "Municipalities will be allowed to levy a tax on the sale of electricity which should in aggregate improve their income from electricity" (Ministry of Provincial Affairs and Constitutional Development, 1998, p.45). Its summary then concluded that details of the proposed restructure were still being discussed and that local government should participate to ensure its interests were represented.

2.6.4 ASSESSMENT OF THE WHITE PAPER ON LOCAL GOVERNMENT

The White Paper was keenly anticipated, but once most had examined it, they felt that although it was well written, it failed to recognise the magnitude of the task at hand. Importantly, it did not provide an adequately detailed policy framework for municipalities to adopt their most basic objective – service delivery. The biggest criticism was that the Paper failed to acknowledge local government's state of crisis; and on that basis, it would be difficult to deliver on the proposed outcomes, let alone the provision of basic services to municipalities' inhabitants. And although the Paper raised and recognised many of the issues plaguing local government, the concluding statements to each showed little appreciation for the magnitude of the problem:

- On finance (p.17), it reckoned that "many municipalities are financially stable and healthy despite these problems"; and
- On administration (p.17), it conceded that "front-line workers

remain de-skilled and disempowered", but it failed to provide a solution other than that support and investment were required.

The fact that the Paper appeared to gloss over fundamental weaknesses in local government prompted strong words. Simkins (1998) published an article titled "Paper a Muddled Response to Critical Queries", focusing on its financial aspects, articulating the failings, and concluding that an opportunity had been missed. Bernstein (1998, p.302) found the description of the state of local government finance "casual and inadequate". Savage (2008, p.288) recognises the failings of the paper and points to:

- A lack of available data at the time;
- The impossibility of fully anticipating the effects of the transformation programme; and
- Policy debates reflecting "irresolvable tensions".

On development, the policy messages were seen as "contradictory and lacking in substance" (Schmidt, 2008, p.22). Comparing his analyses of democratic decentralisation programmes in countries in Africa, Asia, Eastern Europe and South America, Manor (2001, p.8) states he has "never seen such a wildly unrealistic set of tasks imposed upon local authorities" as found in the White Paper. The most damning conclusion drawn was that the White Paper and comments by national ministers at the time "de-elevated" local government from a sphere to a tier; encouraging centralisation rather than decentralisation of power and functions (Bernstein, 1998; Siddle, 2011; Schmidt, 2008; Manor, 2001).

2.6.5 PERFORMANCE OF LOCAL GOVERNMENT SINCE 1998

Restructuring Local Government

The Municipal Demarcation Act (1998) and the Municipal Structures Act (1998) created a demarcation board to determine the boundaries of new municipalities (278 were created) and established structural, political and functional institutions for municipalities. To meet the requirements of the 1996 Constitution, which called for "wall-to-wall" municipalities, three categories of municipalities were introduced based on single- and two-tier local government:

- Single-tier local government, with **Category A** municipalities

(Metropolitan Municipalities) with exclusive municipal executive and legislative authority in their area; and

- Two-tier local government, with **Category B** municipalities (Local Municipalities) and **Category C** municipalities (District Municipalities), where a Category C municipality shares jurisdiction with several Category B municipalities.

Figure 2.2 shows the country's provincial and district borders and the eight Metropolitan Municipalities (Category A). Table 2.2 lists the categories and their respective number of municipalities.

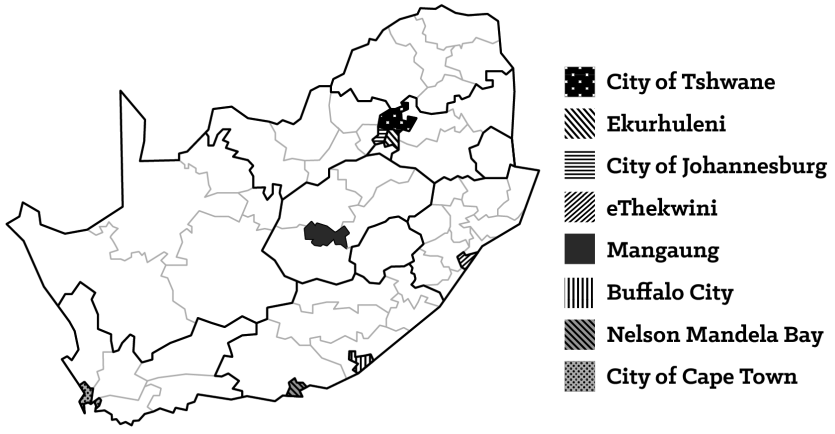


Figure 2.2: Map of South Africa with Eight Metropolitan Municipalities, and Provincial and District Borders (2011)

Table 2.2: Categories of Municipalities (2011)

Category	Number	Notes
A	8	Largest cities with more than 500 000 inhabitants
B	226	Fall into districts and share power and functions with them
C	44	Cover the entire country (excluding metros) with approximately four to six Category B municipalities in each district
Objective of Category A and B is to ensure that communities, especially disadvantaged ones, have access to goods and services		

As early as 1998, local government policy and institutions demonstrated the friction of competing national objectives. While the Constitution and RDP mandated local government to undertake capital infrastructure spending for service delivery, intergovernmental fiscal policy would require compliance with GEAR targets, resulting in a reduction in spending and the centralising of policy with NT.

By 1998, redistribution was deemed a national (not local) responsibility, and the withdrawal of the RSC levy was proposed (it was eventually abolished in 2005). This further limited the role local government could play. The equitable-share formula predicted that only 10% would be needed. The remaining 90% would be self-financed, which immediately meant that local government was underfunded, and although transfers were made to local government in lieu of the RSC levy, they were lower amounts.[9]

Finally, the Profession of Towns Clerk Act, Repeal Act (1996), for reasons of transformation, allowed politicians to appoint municipal managers. Previously, these officials had to be qualified professionals. This created an unregulated environment and compromised performance, as politicians took centre stage. It manifested in a failure to recognise professional municipal officers. The lack of professional development, together with job insecurity, led to high turnover rates and low barriers to entry (Mashatisho, 2014, p.5). This view is shared by Mr M. Pomeroy, head of MEUs at the Johannesburg Municipality, who resigned in 1996 (he had joined in 1959) citing constant political interference.[10]

Recognising the damage that the Act was causing, NT reversed it in 2007, but by this time, local government was being asked to do more with less, due to its declining skill base. Of seemingly even greater consequence was the loss of skills and structure which had been built up over many decades. In hindsight, a more orderly transformation process should have been considered.

Local Government Under President Thabo Mbeki (1999–2008)

Under President Mbeki, the new government identified two priorities to complete the restructuring of local government. The first was the establishment and induction of the newly formed municipalities by 2005. However, delays were immediate, and it was evident that the process had been grossly underestimated and would take much longer than expected. The second priority was the completion of new policy, legislation and frameworks, which included:

1. Free Basic Services (FBS): Pre-defined free quantities of water, electricity, sanitation and garbage-removal services for the indigent;
2. The Municipal Systems Act (2000): Regulating planning, service delivery, performance monitoring and public participation;
3. The Municipal Finance Management Act (2003): Financial management, accounting, supply-chain management, reporting and budgeting; and
4. The Municipal Property Rates Act (2004): Property evaluations and taxing.

Re-elected in 2004, Mbeki's second term came with contradictions. On the one hand, the ANC extended its domination across all three spheres of government and took control of all nine provinces. According to the ANC, this represented an overwhelming expression of confidence in the party, specifically from the poor (Mbeki, n.d.). On the other hand, a tactic that the ANC had used so effectively during apartheid now began being applied to them. After a decade-long break, mass protest action (excluding industrial action) resumed and became a regular occurrence.

Recognising that inequality was growing, Mbeki identified local government as a major role player in his corrective strategy. In this, the inter-governmental relations framework (2005) aimed to improve and promote relations between the three spheres of government, by:

1. Formalising interaction and communication between national departments and local government;
2. Executive mayors being given direct representation in provincial inter-governmental forums; and
3. District and local executives accessing a direct forum to improve their communication and relations.

In this context, the successful bid to host the 2010 FIFA World Cup required major infrastructure projects – precisely what was needed to dent the country's stubbornly high official unemployment rate of over 20% by creating new jobs and opportunities. However, national government overestimated local government's ability to deliver what was required, grossly miscalculating the effects that transformation and other issues had had on local government performance. A two-year intervention (2004–2006) was thus devised. Project Consolidate, and Siyenza Manje (2006–2009; meaning "We are doing it now"), became

formalised programmes of national and provincial government oversight of local government performance. This was provided for and required by the Constitution, but it had until then not been exercised. As a result, 1 124 technical experts were sent to 268 municipalities by 2008 to support financial management and infrastructure planning and training (Powell, 2012). Regrettably, these efforts amounted to little, and in his 2009/10 assessment, the auditor general stated: "despite an abundance of technical tools to support municipalities … the results were only fractionally better than the previous year".

After the two-year intervention of Project Consolidate, and after the initiation of Siyenza Manje, Cabinet adopted the Five-Year Strategic Agenda (5YSA) in 2006. Following a review of the first five years, it was found that expectations for transition were too ambitious and that the mismatch between national policy objectives and local government's ability to implement them was widening. Three imperatives were identified:

1. Local government would have to improve performance and accountability;
2. A national capacity-building initiative was needed to improve skills; and
3. All three spheres of government required improved policy co-ordination, monitoring and supervision.

Simultaneously, the populace had started losing patience, and protest action had gathered momentum. Commonly referred to as "service delivery" protests, because their cause was the perceived lack of service delivery, they became seen as a common revolt against "uncaring, self-serving, and corrupt leaders of municipalities" (Alexander, 2010), and gained notoriety for their remarkable ability to quickly escalate into violence and the destruction of property. Underpinning all the protests was a growing frustration at the injustice of persistent inequality (Nleya, 2011; Reddy & Govender, 2013; Alexander, 2010).

In response, the final act of the Mbeki government was to initiate a review of the White Paper on Local Government and to draft a white paper for provincial government; with a discussion document being developed to discuss retaining, abolishing or reforming the provincial system. The process was however disrupted when Mbeki lost the ANC leadership in 2007 and resigned in 2008.

Local Government Under President Jacob Zuma (2009–2016)[11]

President Zuma commenced immediately with a ministerial name change: the Ministry of Provincial and Local Government would henceforth be known as the Ministry of Co-operative Governance and Traditional Affairs (COGTA). All existing programmes were put on hold and the Local Government Turnaround Strategy (LGTS) was introduced. It was based on an assessment of local government and found that the system as a whole "showed signs of distress" and was characterised by:

- Huge service-delivery backlogs;
- Increasingly violent service-delivery protests;
- A breakdown in council communication with and accountability to citizens;
- Political interference;
- Corruption;
- Fraud;
- Poor management;
- Factionalism in parties; and
- Depleted municipal capacity.

The LGTS required all municipalities to adopt turnaround strategies in the IDP, but as with previous attempts, the LGTS yielded poor results. An interim report by Deloitte (2012, p.4) noted, among other things, that:

- Funding for proposed interventions was limited;
- With limited capacity to undertake existing functions, how could it be possible to turn things around?;
- Interventions to date were "quick fixes" to achieve compliance, and not properly conceived long-term solutions; and
- Municipalities were suffering from transformation fatigue, with cynicism about yet another intervention.

Research conducted by the Institute for a Democratic Alternative for South Africa (Idasa)[12] in 2011, found that as many as 80% of

respondents were dissatisfied with the municipal services they received (Reddy & Govender, 2013, p.86).

Zuma then secured a second term, and in his State of the Nation Address in 2014 reiterated government's commitment to developmental local government, stating that despite achievements, "much still needs to be done". The new COGTA minister, Pravin Gordhan, previously minister of finance, seized upon the recently published National Development Plan (NDP) and launched the Back to Basics (B2B) campaign. Municipalities were rated "Top", "Middle", or "Bottom"; with each category representing roughly one-third of municipalities.

The campaign identified characteristics of municipalities in each category and how Bottom and Middle municipalities could improve and stabilise. B2B is noteworthy for its simple, direct approach, and its honesty, in targeting the Middle and Bottom tiers. Gordhan was then moved back to his original post of finance minister in December 2015, and while the status and progress of B2B has appeared to fade from public consciousness, the electorate finally spoke at the 2016 municipal elections. Here, the ANC retained its overall majority nationally, but lost significant ground to the opposition parties overall. It also lost its majority in four (of eight) metropolitan councils:

- Nelson Mandela Bay, Johannesburg and Tshwane acquired opposition mayors under multi-party coalition agreements; and
- Ekurhuleni is run by the ANC under a coalition, as the party did not secure an outright majority.

Cape Town was retained by the Democratic Alliance (DA) opposition party.

As Brock (2016) put it: "Angry about corruption, unemployment and shoddy basic services, many ANC supporters have turned to the opposition Democratic Alliance (DA) – making a switch that was unthinkable only a few years ago when the party was still seen as the political home of wealthy whites."

An opposition party take-over guarantees nothing though, as many post-2016 events have proved, but closely-contested elections do however serve to strengthen democracy and accountability – two primary ingredients of decentralisation – with the next local government elections coming up in 2021.

Notes

1. In 1652, the Dutch established a trading post on the Cape Peninsula which quickly developed into a colony, and which was to become Cape Town. The Dutch ruled until the British seized the colony in 1795 after the Battle of Muizenberg. The Dutch recovered the territory after the Treaty of Amiens in 1802 but it was surrendered back to the British in 1806.
2. "Abantu" (or "Bantu" as it was used by colonists) is the IsiZulu word for "people". The South African government replaced the word "Natives" with "Bantu" in the 1960s, but as the word became despised by black people due to its association with apartheid, the government slowly started replacing it with "Black" from the mid-1970s. For more details, see https://www.sahistory.org.za/article/defining-term-bantu (accessed 10 February 2021).
3. Also referred to as "locations" by South African urban planners. The word "township", before the apartheid regime, was used for each new planned urban set of plots (erven).
4. Hendrik Verwoerd was the South African prime minister who served from 1958 until 1966 (assassinated) and was one of the primary architects of apartheid.
5. Interview with the author, 13 May 2016.
6. In the context of the Constitution, this is limited to municipal distribution.
7. According to Fanoe and Kenyon (2015): "Section 227 of the Constitution stipulates that: 'Local government and each province is entitled to an equitable share of revenue raised nationally to enable it to provide basic services and perform the functions allocated to it.' The Equitable Shares are unconditional in nature … Formulas are used to divide the provincial equitable share among the 9 provinces and local government equitable share among the 278 municipalities to ensure that allocations are based on objective data and cannot be influenced by bias."
8. A remnant of the British system, a green paper is a discussion document developed by government and experts, and identifies key issues, as well as proposes alternatives. Once accepted, a white paper is issued which is a statement of intent and detailed policy plan.
9. Dr Thornhill, interview with the author, 13 May 2016.
10. Interview with the author, 27 January 2017. At the meeting, Mr Pomeroy stated that this practice continued after his resignation; most of his colleagues left. His replacement was not sourced from the department, but was a senior official who was without a portfolio at the time. This impacted staff morale, as deserving and competent employees were overlooked. It also resulted in declining performance of the undertaking, as the new head was inexperienced.
11. President Zuma's second term was scheduled to end in 2019, but the study limits its research to 2016. His term then ended in February 2018 when, like his predecessor, he was recalled by the ANC.

12. Idasa, a long-standing and highly respected NGO working on democracy and governance, shut down in 2013 after 27 years, due to a lack of funding. Its reports are no longer available online but are still regularly cited.

CHAPTER 3.

LOCAL GOVERNMENT, ITS FINANCES AND THE ROLE OF ELECTRICITY

"We are, most of us, profoundly uninterested in municipal affairs." — Maud (1938, p.1)

3.1 INTRODUCTION

Building on the previous chapter, which outlined the political development of local government within a broader governmental context – hierarchical and centralised from inception – this chapter commences by tracing the evolution of South African municipal finances since democracy.

Historically, as we have already seen, municipalities were required to comply with, and implement, ordinances issued by the Provincial Administrator (directed by national government), without dissent or question and regardless of the beliefs and views of their constituencies. This low political standing was then compounded by national government's requirement that municipalities be almost entirely self-funding; even with only one primary source of local taxation – property tax. Financial assistance from NT was negligible. In 1979, for example, subsidies from central government constituted just 4.7% of the City of Cape Town's income (Solomon, 1983, p.58). And although the 1996 Constitution elevates local government and protects municipal revenue sources, the principle of self-sufficiency, or self-funding, remains. Simultaneously, for reasons to be explained in more detail, the financial needs of municipalities have grown since the

inception of democracy, such that municipalities are unable to balance their budgets without national grants. By 2014, the City of Cape Town required that 14.7% (operating and capital budget) of their budget be subsidised by national government (City of Cape Town, 2015, p.128). This figure had climbed drastically from the above-quoted 4.7% in 1979; while the national average had increased to 8% in 2003 (Bahl, 2003), and NT reported it climbing to 30% in 2015 (NT, 2016a, p.81).

The examination of municipal finances in this book now thus begins by trying to determine:

- The extent to which decentralised local government and financial self-sufficiency (detailed in the previous chapter) were adopted by post-apartheid municipal government;
- How the municipalities have fared;
- The contribution of user fees to municipal budgets; and
- The inconsistencies between the theory and application.

Three international case studies are provided. These explore the role that local government plays in different international environments, how various municipal operations are financed, how these countries' municipal ESI developed, and the financial contribution (if any) that electricity has made, or continues to make, to municipal revenue in these countries.

3.2 SOUTH AFRICAN LOCAL GOVERNMENT FINANCE UNDER DEMOCRACY

3.2.1 PERIOD 1: 1994–2003

Beyond the euphoria of peaceful transition, South Africa's conversion to democracy caught the attention of the world. This was particularly so because it came at a moment in history when the new government could be encouraged, as all developing countries were at the time, to adopt fiscal decentralisation. In truth, major South African cities had never relied on centralised support through national transfers and had always been required to generate their own revenue, albeit that their functions and services only benefitted the white population. Now, Chapter 7 of the Constitution, with 14 sections, mandated developmental local government, which meant undertaking and financing a much wider and inclusive set of responsibilities (Freire & Stren, 2001). Independent-revenue mechanisms were provided to support this mandate, while

provincial and national government were required to give tacit support (in theory anyway). Reform for local government had arrived, and decentralisation enthusiasts around the globe had a best-practice example unfolding, to which they could lend support, refer to at conferences and publicly commend; which they certainly did. See Cameron (1996, 1997 & 1999), and Bahl & Smoke (2003a).

In 2000, the first democratic local government elections were finally held, six years after the 1994 national elections. By then, South Africa's initial successes towards fiscal decentralisation[1] were already being lauded:

1. A constitutional and legal framework had been created;
2. Inter-governmental relations reducing hierarchical arrangements were in place;
3. The number of municipalities had been reduced by two-thirds; and
4. Key elements of a local government revenue system were operational.

These four achievements were major milestones which most countries were still grappling with. As a result, many governments and economists monitored South Africa's progress closely. However, the process began experiencing challenges and to take longer than expected. Two internationally renowned academics undertook and led a detailed case study that was published in 2003 – *Restructuring Local Government Finance in Developing Countries: Lessons from South Africa* (Bahl & Smoke, 2003a) – to assist both the country and analysts working on fiscal decentralisation in other states. The study concluded that difficult choices lay ahead if South Africa was to meet the substantial role it had assigned to local government. The researchers, in undertaking a statistical analysis of 21 developing countries, found local government finance in South Africa to be "considerably more decentralised than might be expected", with only Nigeria (a federal state) having a higher level of fiscal decentralisation. Additionally, Bahl and Smoke found local government tax revenues to be unexpectedly low when considering municipal expenditure, stating that the "level of sub-national government taxation in South Africa is considerably lower than would be predicted given the income level and size of the country"; by their estimation, these revenues were only 42% of expected levels. This suggests that central government requires services to be delivered at the sub-national level, but it is less willing to devolve

revenue-raising powers. It was also found that, compared to their counterparts, South African municipalities enjoyed a high level of fiscal autonomy and could determine the size of their budgets; with property taxes to raise revenue being high, even by Organisation for Economic Co-operation and Development (OECD) standards. The research recommended that:

1. While laws and the Constitution already broadly outlined responsibilities, greater detail was needed, especially when capacity levels among local governments, which varied significantly, were considered;
2. Local revenues should be raised and new revenue sources identified; and
3. Inter-governmental transfers should be stable and transparent, while municipal fiscal gaps should be closed.

Having covered property tax and national transfers, we now focus on utility/user charges for electricity, as well as two new potential municipal funding options during the period in question: utility excise tax and motor vehicle taxes.

Utility/User Charges

The revenue that municipalities get from user charges, especially for electricity, is paramount to them for three reasons:

1. The surpluses they generate are sizable; municipalities use these to fund other activities;
2. These sales provide a large cashflow; most municipalities' debt ratings would be affected without them. For example, gross utility receipts make up more than one-third of total local government receipts, which is greater than property-tax collection. (It must be noted, however, that this is the case for 25% of municipalities – metropolitan and larger cities – with another 50% operating at the break-even mark, and the remaining quarter, at a loss.); and
3. Municipalities use electricity supply as a credit-control tool, because all municipal charges (property tax, water, electricity, garbage collection) are bundled into one bill, and electricity supply is only reconnected if the entire outstanding debt is paid.

Although a reliable revenue source, user charges do however violate three primary characteristics of a good local tax (see Table 1.3 on page 27 in Chapter 1):

1. User charges are a hidden tax, and are thus non-transparent. This consequently compromises accountability, as local voters cannot hold officials responsible if they do not know how and where taxes are used;
2. User charges are transportable. Many users don't reside where the electricity is consumed, and those who contribute most to the surplus, more especially businesses, may move to a municipality with better-priced services; and
3. The electricity tariff is overstated by the amount of the implicit tax. This not only affects efficiency, but it also has an impact on national and domestic commerce.

In 2003, when it was expected that municipal EDI would be regionalised and privatised under the REDs initiative, municipalities feared losing this primary revenue source; this would have threatened their economic viability. Finding a replacement was a priority, and perhaps keeping the status quo even more so, which we will cover in later chapters.

Utility Excise Tax

A utility excise tax was seen as a viable replacement for the surpluses that would be lost from the privatisation/regionalisation of municipal distribution systems. The major advantage of an ad valorem on electricity sales would be the large customer base, making the revenue buoyant, as it would grow with consumption. Through offering rebates and incentives, rates could also be scheduled to suit the requirements of local government. Additional advantages, such as migrating from an implicit tax (one that is not collected directly by government but that results from policies) to an explicit tax (one that is levied and collected directly by government), meant that the tax could be levied regardless of whether a surplus was generated or which municipal entity distributed the service. Likewise, once accepted, it could be introduced to water distribution and garbage collection. In addition, an excise tax would greatly reduce the incidence of tax exporting, as it would accrue to the local authority which presides over the area, regardless of service provider. It would also be straightforward to administer and collect, by being included in the existing bill, requiring

minimal additional effort. Finally, it would resolve concerns over the loss of revenue from restructuring, while complying legally, as the Constitution allows for the use of an excise tax.

A major concern of adopting an excise tax, however, is it being seen as regressive and affecting low-income households disproportionately. And even if matched at a rate to achieve existing surpluses, thus leaving tariff levels unaffected, its visibility to consumers could make it politically unpopular. Under such conditions, the call for the provision of relief to low-income households would be strong.

Motor Vehicle Taxes

Even though revenue from the annual renewal of motor vehicle licences continues to accrue to provincial government, there is ample justification for municipalities to access this revenue source; and if not outright, to then receive a share of the proceeds. Vehicle taxes possess most of the characteristics of a good tax, such as fairness and administrative ease, while being both revenue-productive and buoyant. Local roads must be maintained; taxes should help offset such costs. Additional options for revenue include congestion charges (this involves levying charges for driving in city centres, in an attempt to reduce traffic), parking charges, fuel taxes and tolls. Such measures could also help reduce pollution and congestion. Eventually, in 2009, metropolitan municipalities started receiving a portion of the national fuel levy to assist with road maintenance, as recommended by Bahl and Smoke in 2003.

3.2.2 PERIOD 2: 2004–2016

Analysis of NT's *Annual Budget Review*[2] publications shows key underlying trends. Primary among these is a steady reduction in the percentage of own revenue generated by local government. For example, Solomon (1983) calculated that national transfers made up 4% of Cape Town's revenue in 1983. This was relatively representative of the national average at the time, but Bahl found that this number had doubled to 8% by 2000. By 2016, national transfers made up 80% (district municipalities), 37% (local municipalities), and 19% (metropolitan municipalities) of revenue. Figure 3.1 clearly illustrates this trend, where for the period 2003 to 2016, national transfers quadrupled and the local government percentage of national budget increased more than 2.5 times. Some, but not all, increases were planned, such as the decision to terminate the RSC levy on 1 July 2005. The loss of revenue to municipalities was compensated by increasing national transfers,

which in 2006 resulted in the percentage of total national budget transferred to local government increasing from 4.9% to 6.3%, with national government making greater use of non-discretional funding.

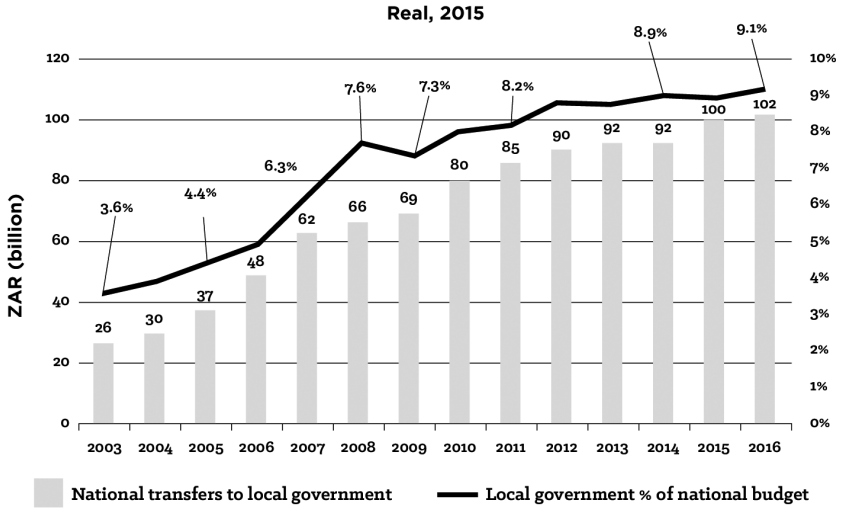


Figure 3.1: National Transfers to Local Government (2003 to 2016)

Source: *Author, derived from NT*

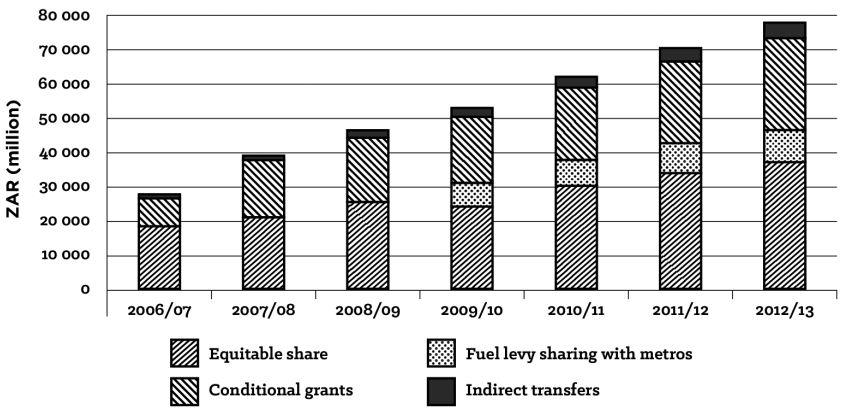


Figure 3.2: Breakdown of National Transfers to Local Government (2006/07 to 2012/13)

Source: *Moore (2012)*

The other equally important trend was the obvious realisation and tacit acceptance of sub-optimal performance at local government level. This is evidenced in the tone of the NT commentary, which in the early 2000s – although recognising the challenges of amalgamating municipalities (843 to 278) and being pragmatic about the task of transforming them to meet their service-delivery mandate – was positive and ambitious. This gradually transformed to one of concern, and even alarm, about continued poor performance, mismanagement and growing backlogs. In 2004, NT made an additional R750 million per annum available to municipalities, to prioritise in-house capacity building (NT, 2004, p.162). In 2006, continued capacity constraints in municipalities saw NT launch the Siyenza Manje project to strengthen engineering and project-management expertise. The initial budget allocation was R742 million (NT, 2007, p.147), which was expanded to include financial management and which cost R1.45 billion by 2011 (FFC, 2011, p.5).

In 2014, NT summed up the situation as follows:

> While much has been achieved in the rollout of municipal infrastructure … Significant work needs to be done, both to eradicate backlogs in access to services, and to ensure that services are properly operated and maintained over the long term … there has been widespread waste and inefficiency. (NT, 2014, p.101)

In 2016, NT then announced another review to determine what could be done to improve performance, but this performance continues to be very poor.[3]

These two interrelated trends coalesce into a growing exasperation that despite over a decade of annual double-digit percentage increases in funding to municipalities, the financial status of local government remained precarious or had worsened; with the 2011 *Budget Review* (p.59) containing a section titled "Vulnerable cash position of municipalities". Of course, while being a concern, municipal finances were perhaps less of an issue as the national economy grew up until 2010, albeit by far less than required. However, the sustained pressure of low (<1%) and negative GDP growth since 2010 has meant national resources having to be carefully managed. Once again, reforms were put in place, but with a greater focus on financial efficiency: "Municipalities can improve billing and revenue, reduce water and electricity losses and enhance maintenance"; and, "Municipal standard chart of accounts, in pilot phase, will promote transparency and accountability" (NT, 2016a, p.83).

The final trend identified is the growing impact of higher electricity tariff increases on sales from 2007 onwards. Initially, this resulted in a windfall for municipalities, as the increases, which came off a low base, took some time for users to respond to. By 2016, however, significantly lower surpluses were generated amidst a depressed economy and consumers having taken measures to reduce consumption: "Recent increases in the costs of bulk electricity and water have reduced the surpluses municipalities generate from these services" (NT, 2016a, p.92). Significant reasons for smaller surpluses include reduced consumption due to the magnitude and frequency of tariff increases, together with higher bulk tariffs charged to municipalities, which impact expenditure and revenue ratios. (This issue is dealt with in greater detail in the case study of Johannesburg Electricity Undertaking [JEU] in Chapter 5).

In recognising the financial and skill deficiencies of municipalities, central government has taken various measures, including:

- Revising the equitable-share formula to favour smaller and district municipalities in order to compensate for the limited revenue-raising opportunities now available to them;
- Allocating a portion of the national fuel levy to metropolitan municipalities to fund road maintenance; and
- Expanding conditional grants for infrastructure projects (electrification, water, transport, urban settlements, and rural roads) to ensure service-delivery projects are prioritised. Indeed, conditional grants in 2016, as a percentage of total transfers from national to local government, had increased to over 80%.

NT then went one step further and introduced indirect transfers,[4] while after a long battle, municipalities succeeded in preserving one of their two primary revenue sources (electricity surpluses) when the REDs initiative was withdrawn. Metropolitan electricity networks were also strengthened by national government as part of the 2010 FIFA World Cup project, which in the view of Dr Willem de Beer, ex-COO of EDI Holdings, postponed the crisis facing the municipal EDI.

Despite these developments, by 2016, local government had not achieved the fiscal decentralisation objectives identified earlier in this book, and if anything, the reverse is occurring. Indeed, additional and new own-revenue sources have as yet to be identified and introduced, while annual shortfalls are "plugged" by electricity surpluses and ever-

increasing national transfers. And national government's efforts to improve municipal performance have been limited at best. For example, in the auditor general's June 2016 media release on local government audits, it was reported that municipalities had improved over the last five years, with 54 receiving clean audits, compared to just 13 for the previous period. If one considers that there are 278 municipalities, however, then a mere 54 demonstrates just how poor the overall performance is. Of greater concern was the finding that: "In 2014–15 the [Auditor General of South Africa] AGSA rated the financial health of 92% of the municipalities as either concerning or requiring intervention [82% in 2012–13]." This was made apparent by net deficits, with current liabilities exceeding current deficits; an inability (or taking too long) to collect revenue; and not paying creditors on time (AGSA, 2016). On this evidence, it would thus appear that the issues of inadequate skills and financial resources faced by local government since formation of the Union continue in the 21st century. This is a long-term trend that is reinforced by management instability, the intense turnover that took place during the amalgamation process and "transformation fatigue" as experienced in Cape Town, and the loss of skilled and semi-skilled senior employees). And despite constitutional mandates attempting to elevate and reform local government, with sincere, concerted efforts to feasibly manifest this, it has not occurred.

Again in 2016, the tenuous nature of revenue from municipal services was publicly raised by the then Johannesburg mayor, Parks Tau, when he called for an official review of local funding sources. The issue has gained momentum, with the South African Local Government Association (SALGA) and other local government leaders adding to such calls; with local government's developmental mandate at the heart of the municipal finance review argument. This essentially states that in overcoming the spatial segregation legacy of apartheid and the high urbanisation rate of indigent people, in the form of "land invasions, mushrooming of informal settlements and proliferation of backyard dwellings" (Tau, 2017, addressing the Gauteng Infrastructure Funding Summit), the unavoidable consequence is revenue earmarked for infrastructure development now being redirected. Additionally, the expectation of extracting meaningful revenue for services provided to the unemployed as well as low-income earners, is unrealistic. Indeed, even those who do pay, consume less than the costs incurred to service them. Thus, the 9% of overall national revenue which is transferred to local government (Figure 3.1) is insufficient, and SALGA has called for legislative changes – particularly singling out "changing NERSA's and

ESKOM's unfettered rights to impact on municipal infrastructure and finance management" (SALGA, 2017; Tau, 2017; Naki, 2016).

Municipal finances also featured prominently at the 2017 Chartered Institute of Government Finance, Audit and Risk Officers (CIGFARO) conference. Here, in a top-down explanation, the Financial and Fiscal Commission (Mabugu, 2017) noted the impact of the protracted economic slowdown on public finances (income down by R352 billion for the period 2009 to 2016, of which R24 billion would have accrued to local government), thus putting pressure on all government expenditure. Regardless, five structural changes deemed necessary to maximise revenue generation were listed:

1. Reforming existing tax instruments: Increasing or broadening the VAT rate,[5] for example;
2. Introducing new taxes: Carbon tax,[6] local business tax, and land-value capture (which allows communities to recover or "capture" land-value increases resulting from government investment and actions);
3. Enhancing tax administration and closing loopholes: Addressing base erosion and profit shifting (when companies "shift" their profits from high-tax jurisdictions to low-tax ones, thereby eroding the tax base of the high-tax areas);
4. Increasing efficiency: Reducing the public-sector wage bill, improving municipal efficiencies (reducing electricity and water losses, and resolving debt issues) and improving inter-governmental co-ordination; and
5. Combinations of the above.

NT's speaker (Fanoe, 2017) noted that popularly-quoted factors contributing to municipal failures were in her view anecdotal. These include:

- Underfunding;
- Unviable municipalities;
- Governance failures; and
- The design of the inter-governmental system or national government itself.

The facts, however, it seems mirror the sentiments expressed by Dr Andrew Siddle and Dr Thornhill in their interviews with the author,

as well as the auditor general's findings: Municipalities collectively underspend each year, with their share of total national revenue actually being substantial at 24% (9% transfers plus own-revenue sources); and that ultimately it is mismanagement, lack of internal controls, leadership challenges, and massive water and electricity losses which need immediate remedial action.

3.3 MUNICIPAL FINANCE PRACTICE COMPARED TO MUNICIPAL FINANCE THEORY

Municipalities with limited revenue sources are left with little choice but to rely heavily on user charges – making these particularly attractive, because they are not accessible to the other spheres of government. This practice, theorists note, allows for accountability, as residents can vote new political parties into power if they are dissatisfied with service levels. There are however two disadvantages.

The first, especially when revenue is constrained, is the strong tendency to maximise surpluses for general-purpose use – at the expense of the service itself; with maintenance and new capital investments as typical first casualties. In effect, the user-charge practice provides a subsidy from those who use the service to those who do not; a crude redistributive technique often missing the target group entirely.

The second disadvantage is that tariff structures that are not carefully considered can have material consequences. For example, quantity/volume discounts place the burden on low users and are thus regressive. Marginal pricing is also problematic, because it is difficult to define costs properly and it may still be difficult to determine the appropriate charge even if costs are defined correctly. For example, if users deem electricity tariffs too high, they will reduce their consumption or, for those who can afford it, switch to distributed generation (electricity generated and supplied by a variety of smaller and alternative sources) or energy-efficient technology. This puts the entire municipal funding model under pressure; all of which now occurs in a strained economic environment that only serves to further compound the effects (Solomon, 1983; Mawhood, 1993; Reynolds, 2004; Van Ryneveld, 1990; Sioshansi, 2014). Here, thus, it seems evident that the theoretical projections were accurate, as all these stated outcomes have materialised.

A more important issue, however, is that there are two conflicting objectives. Theory states that the municipal priority should be efficiency, with broader developmental goals left to national government. And therein lies the rub for local government in South

Africa. The Constitution and White Paper on Local Government call for developmental local government to address past inequities and apply a holistic approach to achieve other policy objectives, such as job creation.[7] Yet, sustainable financial practice, efficient usage of resources, transparent tariffs etc. are equally promoted. This contradiction places local government in an untenable financial situation, as the political imperative of development is always likely to take precedence over sound financial management – thus confirming the concerns and scepticism that met the White Paper when it was issued.

In many ways, the long-standing municipal practice of cross-subsidisation funded from user fees, which served WLA authorities ably for decades, was seized upon after 1994 to fund the extension of municipal services to previously excluded and marginalised residents. Simultaneously, ineffective and inefficient local government has increased overall municipal funding requirements. This means that proceeds from what is seemingly an inexhaustible source of revenue (which it is not) increase disproportionately annually.

3.4 INTERNATIONAL CASE STUDIES

In viewing the South African scenario from a more dispassionate perspective, it would perhaps add further insight to consider municipal practices from other countries. In this chapter, we look at three international case studies:

- **Norway:** Municipalities continue to be financially involved in the ESI;
- **Italy:** Once an agrarian economy, Italy industrialised at the same time, and with similar power requirements, as South Africa. The government framework, however, is based on Napoleonic principles vastly different to those of England and South Africa, providing a different perspective; and
- **England:** South Africa's government framework was based on the British system; and thus, having had the same starting point, it is worth reflecting upon.

3.4.1 CASE STUDY 1: NORWAY

The legal foundation for local government was established in 1837. From 1900, infrastructure projects were undertaken (power plants, gas and water reticulation, roads and garbage collection), funded from two

local taxes: property and income. Total revenues from local government amounted to about 4% of GDP. The high municipal taxes led to a debt crisis in the 1920s, and many municipalities went bankrupt. National government intervened, which ultimately resulted in a highly centralised welfare system by the end of WWII (Blom-Hansen et al., 2010, p.96).

Local government was reformed in the 1960s; national transfers to local government were increased, and caps were placed on local taxes. The 1980s then saw municipalities taking on additional functions through the provision of grants and incentives, while giving these legal status. In this, Norway, like the other Scandinavian states, is a welfare state, with local government being tasked with service delivery, including, among other things, schooling, primary healthcare, care for the aged, local roads, electricity, water and sanitation.

By 2013, local government funding was broken down as follows:

- Local taxes (40%);
- General grants (36%);
- Fees and charges (15%);
- Interest and dividends (5%); and
- Non-discretionary grants (4%).

Fees include revenue from the generation and distribution of electricity. An interesting feature is the 5% contribution from interest and dividends which stems from the historical role of municipalities owning power companies. These had generated 75% of the country's electricity (Bye & Hope, 2005, p.25), but many municipalities and counties sold their power plants in the early 1990s when the electricity market was deregulated, reducing their generation capacity to 52% (Government of Norway, 2008, p.78) and investing the proceeds in financial markets (Blom-Hansen et al., 2010, pp.101–102). According to Bye and Hope (2005), Norway decided to deregulate the electricity sector because it operated inefficiently. Investments were reimbursed through price increases and cross-subsidisation between utilities. There was no evidence of monopoly profits, but "the distribution networks used their monopoly power to be cost inefficient rather than profitable" (p.7). Under deregulation, three licence types were created: production (generation), grid (regional, central and local), and trading; with most of the 159 distribution companies owned by municipalities in 2008.

A major objective of deregulation was to improve efficiencies. This took place, resulting in electricity tariff decreases, which ironically, undermined well-established energy-efficiency programmes. Tariffs are not regulated, but there are rules that decide their structure and upper limits on cost recovery from customers. Distribution tariffs vary amongst companies, and government provides an annual grant to distribution companies to reduce tariffs in areas with the highest cost per kilowatt hour (kWh) and to level tariffs between companies (Nordic Energy Regulators, 2011, pp.89–95).

3.4.2 CASE STUDY 2: ITALY

Italy has four levels of government:

1. Central;
2. Regional (20 regions);
3. Provincial (110 provinces); and
4. Municipal (nearly 8 100 municipalities).

Provinces and municipalities came with the establishment of the Kingdom of Italy (1861) and regions with the 1948 Constitution. Regions, although allocated administrative and legislative powers by the Constitution, enjoy little power. Their authority is resisted both by municipalities and a central government ruled through centralised institutions; with any challenges made against national government by the regions in the Constitutional Court of Italy consistently failing, as all the Constitutional Court judges are appointed by national government (Piperno, 2000, pp.4–5). Simultaneously, provinces do little more than co-ordinate activities between the thousands of municipalities; and as Piperno notes, "Italy offers interesting insights into the risks and pitfalls that may be encountered when a decentralization process is not well managed" (Piperno, 2000, p.1). Indeed, the complicated nature of Italian government, in terms of absolute numbers and structures, has resulted in multiple levels of government responsible for the various components of a function. For example, local municipalities are responsible for hygiene and health, but not hospitals (Goldsmith & Page, 1987, p.113), while energy production, transportation and distribution are provided by regional government.

Until 1972, local government finance had a high degree of autonomy. National government then centralised the national revenue system, resulting in increased central transfers and decreases in own-source

revenues (Table 3.1). Local taxes were abolished, whilst municipal functions were increased, and central government funding went from 10.3% to 58.7% in just eight years (1972 to 1980). Inevitably, the regions and the municipalities yielded much of their autonomy in exchange for additional revenue (Goldsmith & Page, 1987, pp.119–122).

Table 3.1: Revenue of Regional and Municipal Government 1972 to 1980 (Italy)

Revenue source	1972		1976		1980	
	Regional (%)	Municipal (%)	Regional (%)	Municipal (%)	Regional (%)	Municipal (%)
Tax revenue	11.6	15.6	3.9	3.6	1.6	6.0
Borrowing	–	67.3	4.1	69.6	0.7	27.8
Other own source	0.8	6.8	2.7	6.2	1.7	7.5
Central transfers	87.6	10.3	89.3	20.6	96.0	58.7
	100	**100**	**100**	**100**	**100**	**100**

Source: *Goldsmith & Page (1987)*

Then, in 1990, Italy reverted to financial decentralisation for local government. The first change, in 1988, was the introduction of the "*addizionale*", a surcharge on electricity consumption (for any purpose), levied by the energy suppliers and paid to the local authority (Iannello, 2008). The levy was EUR18.59 per thousand kWh in 2011 (EU, 2016). In 1993, municipal property and garbage-removal taxes were introduced; and by 2005, revenue collected directly by municipalities accounted for 41% of total revenue – rising to 61% if the personal income tax surcharge is included (Iannello, 2008). Here, a study by Di Liddo et al. (2014) on 5 662 municipalities identified six categories of own-source revenue:

1. Property tax (35%);
2. Usage and other fees (27%);
3. Waste management (20%);
4. *Addizionale* surcharges on electricity and personal income tax (10%);
5. Other taxes (3%); and
6. Other fees (5%).

Italy's levels of electricity consumption track the country's economic development. This was exceptionally low until the end of WWII, and almost exclusively agrarian, with generation undertaken by vertically integrated private firms with private networks that served the major cities (Busnello, 2014, pp.23–26). Economic growth started in earnest in the 1950s and then took off during the *miracolo economico* (economic miracle) of the 1960s, with the requisite demand for electricity increasing 8% year-on-year during this period. The Italian network, a fragmented and effectively oligopolistic cartel, protected its high-profit business and was not prepared to make the large investments needed to support industry and electrify the country. Government intervened and in 1962 nationalised the electricity industry, creating *Ente Nazionale per l'Energia Elettrica* (ENEL). All private electricity producers (more than 1 200 companies) were obliged to sell their activities to ENEL. This excluded a few industrial producers such as FIAT, as well as municipal producers who supplied their city, most notably ACEA in Rome and AEM in Milan, and small producers of less than 15 gigawatt hours (GWh)/year (Busnello, 2014; Pagliano, 2004).

The Italian ESI was dominated by state-owned enterprises until 1999, when the market was liberalised in accordance with European Union (EU) requirements; with generation still controlled by ENEL (80%); auto-producers (who produce electricity solely to support their primary activity) and IPPs (15%); municipalities (4%); and private companies (less than 1%). The picture has changed significantly with full market liberalisation, and by 2012, ENEL's market share had dropped to 25.4%.

Electricity distribution – now a fully regulated business – is licensed by local municipalities, meaning that there are more than 8 000 licence areas serviced by 151 distributors. ENEL dominates distribution, with an 86% market share, but this figure is down from close to 95% during the 1990s. Next are the large municipal distributors, many of which are listed private companies (A2A with 4%; ACEA with 3.4%; and AEM with 1.3%) (Benedettini et al., 2013; Pagliano, 2004; Mercados, 2015; Montella et al., 2014). And even though distribution companies are publicly listed, the municipalities hold majority stakes, with the municipality of Rome for example holding 51% of ACEA in May 2016 (ACEA, 2016).

A notable characteristic of the Italian electricity sector is the fact that tariffs are geographically uniform. It is a legal requirement that the same network tariff for final customers is applied throughout the country. To ensure a level playing field, national government compensates distributors who have a higher cost structure; while the

tariff structure is being reviewed (2015 and ongoing) to ensure it provides the right signals to improve energy efficiency (Mercados, 2015, p.421). As already stated, Italian municipalities have always generated revenue from electricity, especially from distribution, as they are the legal owners of the licence; and while electricity-distribution revenues are not publicly available (Mercados, 2015, p.415), analysis shows electricity contributing a small, but not insignificant amount to municipal revenues.

Finally, in reducing electricity consumption, several countries introduced progressive tariffs following the 1973 oil crisis; with Italy, in 1974, being the only country in Europe to introduce such a scheme for households. This was followed shortly by a 3-kilowatt peak (kWp) capacity limit. The measures were so effective that 90% of households responded by adopting the cheaper tariff option. These two steps are credited with reducing Italy's overall electricity demand; while time-of-use tariffs were also introduced for industrial users (Pagliano, 2004; Dehmel, 2011).

3.4.3 CASE STUDY 3: ENGLAND

A hallmark of the evolution of local government in England was its independence from central government. This was largely because the service of local justices, who were appointed by central government, was compulsory and not compensated. This separation of local and central government, or dual polity, thus allowed each sphere to operate independently. This system was different to that found in many European countries, where local administration rather than local government exists – such as in France (Goldsmith & Page, 1987, p.68). And while property taxation has existed in England for many centuries, its modern form was derived from the Poor Law of 1601, through which local authorities were given the power to levy a property tax, or "rate", to fund their services. At this time, the right to vote was related to property ownership, and it was decided to tax property owners, as it would be them who benefitted from locally provided services (Government of the United Kingdom, 2004). Today, the UK continues to rely heavily on property tax, deriving 11.9% of its total tax revenue from this source in 2015, which is the highest in the OECD (Busnello, 2014; Pomerleau, 2015).

Local government is responsible for a wide range of government functions. The list of these functions gradually grew as traditional services were expanded and new ones were introduced. By the mid-1920s, there were as many as 584 power stations, or undertakings,

as they were legally referred to. Undertakings supplied a specific area, enjoyed monopolistic rights and privileges, and were owned and operated by private enterprises (34%) or municipalities (66%) (Robson, 1928). This system of vested interests, which allowed municipalities to use the earnings of the municipal power plants to pay non-electrical operational expenses, blocked any attempts for the development of a co-ordinated and integrated national system.

Legislation, based on the findings of the Weir Committee report[8] in 1926, created the National Grid and the Central Electricity Board. The Grid interconnected regional grids by 1933, and an integrated National Grid was in place by 1936. This would provide an abundant supply of electricity at maximum economies of scale and at sufficiently low costs to stimulate demand and economic development in the post-WWII period.

The Electricity Act of 1947 included legislation to prevent the relief of rates from electricity undertakings' funds "to an inordinate and unwise extent", so as to promote the use of electricity in the country[9] (AMEU, 1937, p.71). Under the Boards National Plan, nine national power zones were created, covering over 98% of the population (Hormell, 1932, pp.128–139), after which the Electricity Act of 1947 reorganised and nationalised the ESI and ended any further municipal involvement in electricity generation, transmission and distribution.

However, the basis of ownership of undertakings was motivated by service, savings and prestige; profit was never the key issue (Hart & Demetrius, 2000). Indeed, the larger municipalities supported the restructuring of the industry, as they recognised the long-term economic benefits of an integrated system (Hormell, 1932), and the loss of marginal revenue was a small price to pay.

In addition to electricity and gas supply, hospital services and cash assistance for the poor were shifted from local to national government. Nonetheless, the additional services that had been allocated to, and the higher standards that were expected of local government over time still necessitated ever-increasing central grants, and the surge in local government spending became untenable by the mid-1970s, as only 35% of total revenue was collected from own sources – property rates.

The Layfield Committee, which reported in 1976, found that the finances of local government were becoming unsustainable, and a choice had to be made between "a continuing and accelerating drift towards further centralisation or a reaffirmation of local responsibility". An expanded tax base was needed, and a form of a local income tax on personal income was recommended.

Central government finally had to act when it was forced to take a loan from the IMF in 1976, a condition of which was to ensure

significant cuts in public expenditure, including national grants. Local municipalities countered this by increasing property tax rates. National government then introduced spending caps for local government.

The Conservative government, in power from 1979, decided against expanded revenue sources for local government and started working towards replacing the property tax with the infamous poll tax, which was a community charge (tax) on individuals. Recognising that the poll tax would not be popular, the government forced the decision through in 1987, with the conference message: "There are bound to be difficulties, so let's get them over and done with quickly" (Wilson & Game, 2011).

However, national government grossly underestimated how unpopular and administratively cumbersome this tax would be. After riots broke out following the implementation of the poll tax in 1990, the government was forced to backtrack. The tax was formally replaced with a council tax in 1992 (effective 1993/94), which strongly resembled the property tax system that had been supplanted.

The consequences of the poll tax were however profound and long-lasting, with more than a million voters "disappearing" from the register, while poll-tax rates had to be increased to make up for non-payers, creating a new culture of non-payment. By the time the tax was abolished, the proportion of locally determined net revenue expenditure had been reduced to 15% (53% in 1989/90), and VAT had to be increased from 15% to 17.5% to pay for the collective shortfalls – a policy fiasco by all accounts (see Hart & Demetrius, 2000; Green, 2017; King & Crewe, 2014).

Ultimately, little was achieved, with 63% of local government income received in 2012/13 being from government grants, compared to 65% in 1975/76 (Wilson & Game, 2011; Ellwood, 1998; Government of the United Kingdom, 2014; Dafflon, 2002), even though national government had gone to extraordinary lengths to curb local government spending since 1975.

Within this milieu, the consequences of reduced local independence and discretion – the long-admired hallmarks of English local government – manifested in four areas:

1. Decreased local control of finances;
2. Privatisation of certain local services;
3. Loss of local state autonomy over various service functions; and
4. The expansion of non-elected sub-national bodies to regulate local economies.

A more even-handed approach by the Tony Blair Labour government (1997 to 2007) saw increased funding directed to local government, but the Conservative Party, which came into power in 2010 and was responding to the 2008 global financial crisis, acted immediately, and local government endured five years of consecutive budget cuts, totalling 40% by 2015, with an announcement of a further 8% per year for four years (Goldsmith & Page, 1987; Stenson & Watt, 1999; Johnston & Pattie, 1996; Murray, 2014; Rutter, 2015; Goodwin & Painter, 1996; John, 2013).

In terms of public electricity generation, 14 electricity boards were finally privatised in 1989 under the neo-liberal economic policies of the Margaret Thatcher government. This ended all government ownership or involvement in ESI in England, but less than two decades later, municipalities once again got involved in the ESI, albeit on a micro scale. In an attempt to address energy poverty by supplying local-authority properties[10] and to reduce their own consumption costs, several energy companies that provide electricity and heat have been financed or set up by local councils such as Woking, Milton Keynes and Southampton. The success of these efforts has generated interest, but significant barriers exist, such as existing national policy and legislation (Roelich & Bale, 2015; Hetherington, 2013).

3.5 CONCLUSION

The objective of this chapter has been to extend the discussions around municipal funding and functions, while also providing appropriate international benchmarks against which to view South African local government. This then allows for an informed discussion of the role of electricity in the next chapters, and a comparison against the case study of Johannesburg in Chapter 5.

Indeed, the post-1994 period is particularly pertinent for South African local government, because it is one that is affected by the challenges of both the past and the future. Local government is now elevated to a full tier of government, with a new developmental mandate to address past inequities, but it is still hampered by the timeless challenges of limited income-raising streams, which speaks directly to the Johannesburg case study to come. This period is also one of concerted global focus on the importance of financial self-reliance of local government. This has allowed us to make meaningful comparisons with international practices in terms of imposed, but sometimes impossible local government self-reliance.

Ultimately, the international literature informing this book shows

that even though local government functions are more likely to be weakly constituted, and municipal finances are more likely to be under-resourced in developing countries, it is necessary to establish these functions and provide the necessary resources for their realisation. And while the allocation and implementation of local government functions do vary from country to country, all local governments invariably face similar challenges.

Most notable of these is that, in the end, they must yield to central government decisions (funding cuts, policy changes, etc.); and they have limited revenue-raising instruments available to them, as they are generally barred from using national tax instruments to raise revenue. Property tax is by and large the only tax they can claim as their own, and although this tax is reliable, it tends to be inequitable due to its bluntness. Here the research has shown that there are sound economic reasons for avoiding tax duplication between tiers of government, but that the effect on local government finances has been to place municipalities in a precarious position.

National transfers undoubtedly compromise autonomy and are of the first expenditure items to be cut during periods of national belt-tightening – evidenced in England and Norway. It is however necessary to consider what kind of autonomy is appropriate in each territory. It is well understood that South African municipalities have a developmental objective, but they cannot realistically be expected to achieve this without the tacit political and financial support of the other two spheres of government. Sharing and co-managing responsibilities is exceedingly difficult to conceive, to finance, and to implement – a long process which at a minimum must rely on sustainable and robust economic growth and the fair redistribution of national finances. The current situation with South Africa's municipalities shows that no sustainable response has been found since 1994.

Additionally, poorly considered national policy changes can often wreak havoc at local government level, as seen with the poll tax in England. Thus, it is not surprising that local government, which is expected to provide public-benefit services for which it cannot recoup costs (libraries, public parks, recreation centres), will seize upon revenue-generating opportunities wherever they present themselves, as certainly has been the case with electricity.

Notes

1. As per definition: Revenue from central government and the authority to raise revenue from local sources are transferred from national to sub-national levels (see Chapter 1.3.2 on page 17).
2. The reports are published annually and sourced from NT's website: www.treasury.gov.za/documents/national-budget/ (accessed 12 February 2021).
3. See https://businesstech.co.za/news/government/412459/the-shocking-state-of-south-africas-municipalities-uncovered/ (accessed 12 February 2021).
4. Under this approach, a national department undertakes a function on behalf of the municipality (or province). No funds are transferred, and on completion, the infrastructure is ceded to sub-national government which is then responsible for operations and maintenance. Such projects grew from R3 billion in 2010 to over R10 billion in 2016 (NT, 2016a; AGSA, 2016).
5. VAT was increased by 1% (14 to 15%) in 2018. In Minister Malusi Gigaba's words "… increasing VAT was unavoidable if we are to maintain the integrity of our public finances"; this was expected to add R22.8 billion to the fiscus per annum.
6. The Carbon Tax Act No. 15 of 2019 came into effect on 1 June 2019. It is to be introduced in two phases. For more information, see https://www.iea.org/policies/3041-south-african-carbon-tax (accessed 12 February 2021).
7. It is common practice for political parties contesting municipal elections to make job creation a campaign pledge. For example: "Our manifesto recognises that jobs are created by small businesses and not by government" (www.enca.com/south-africa/damanifesto-promises-recipe-sa-success [accessed 12 February 2021]); and the Johannesburg Metropolitan Police Department's (JMPD's) recruitment of 1 500 officers was aimed at "creating jobs while curbing crime" (www.iol.co.za/news/crime-courts/jmpds-recruitment-of-1-500-officers-creating-jobs-while-curbing-crime-8874680 [accessed 12 February 2021]).
8. *Report of the Weir Committee Appointed to Review the National Problem of the Supply of Electrical Energy*, 1926.
9. From 1930, the contribution to the relief of rates could not exceed 1.5% of the net surplus revenue of the undertaking, and no sum could be paid to aid local rates unless the reserve fund amounted to more than 1/20th of the aggregate capital expenditure of the undertaking. Any surpluses would be returned to the consumer in the form of lower tariffs.
10. In 2016, approximately 2.3 million households in England spent more than 10% of their take-home pay on heating bills (Government of the United Kingdom, 2017).

CHAPTER 4.

ECONOMIC HISTORY AND THE ROLE OF ELECTRICITY

"Economies rarely get rich on agriculture alone." — Beattie (2009)

4.1 OBJECTIVES AND STRUCTURE OF THE CHAPTER

At its core, this book seeks to contextually understand the challenges faced by the municipal EDI, which evolved in tandem with, and continues to be influenced by, two key factors:

1. Government structures (national and provincial); and
2. The national ESI and its contribution to the development of the economy; which municipalities form only a part of.

So, it is to the second context that we now turn, because while in truth the ESI of every modern nation is the lifeblood of its economy, for South Africa this is perhaps even more so. Here, the state's entire economic development and industrialisation strategy was premised on inexpensive and plentiful energy, especially low-cost electricity, providing a competitive advantage. And indeed, the ultimate price of the crucial extent to which the system was dependent on cheap, abundant, electricity, has been borne by the entire economy throughout South Africa's history as a unified nation (Mohammed, 1997).

4.2 INTRODUCTION

Economists broadly agree that a country's ability to create or attract capital for local investment is what leads to economic development.

Countries that do not, or choose not to do so, find themselves in a vicious cycle of poverty. Although each country will follow a different road to industrialisation, certain generalisations can be made (Trapido, 1971, p.50). In the case of South Africa, it was the discovery of diamonds, gold and other metals from the 1860s onwards that catapulted it from a poor, rural context, to a sought-after urban destination for entrepreneurs and skilled migrants. Initially, industrialisation led to high growth rates that peaked in the 1950s and 60s. Then South Africa's economic fortunes began to unravel. To understand this, over the decades, local and international academics have intensely scrutinised the country's economy; with much focus falling on the relationship between apartheid and capitalism. In the ideologically polarised world of East vs. West during the Cold War era, this resulted in academic comment and analysis largely following similar divergence. Indeed, South Africa's segregationist policies, which had a direct, if not overwhelming, influence on the economy, meant that an area of study which ordinarily would have been dominated by economists, was ultimately shared with political writers and historians.[1] And it is here, under the "liberal-radical" debate, where some had postulated that capitalists were not implicit in the apartheid system, with little choice but to comply with, and operate under, prevailing conditions (Nattrass, 1991; Verhoef, 1998; Saunders, 1988), while others disagreed. This chapter now delves objectively into these conditions and the country's economic development and the role of electricity within them.

4.3 ECONOMIC DEVELOPMENT UP TO 1910: HOW THE DISCOVERY OF MINERALS CHANGED EVERYTHING

4.3.1 ECONOMIC DEVELOPMENT: SETTING THE SCENE

Feinstein (2005, p.1) attributes South Africa's economic development to the "unique endowment of human and natural resources … Other countries possessed one or two of the distinguishing features, but only in South Africa were all of them present together". Feinstein identifies three such key features.

The first was the presence of a large indigenous population, estimated at over 1 500 000 at the beginning of the 19th century. The second was the significant number of European settlers, which grew from 30 000 in 1820 to 1 300 000 by 1913 (Maddison, 2007, p.579). Such extensive European settlement in territories that had a large indigenous population was not the norm. This was not the case

in India, most of Asia, and the rest of Africa; while from the outset here, settlers and the indigenous population were intrinsically divided. This had major and enduring implications for the group who ultimately controlled water, natural resources and land. The third of Feinstein's features was the variety and quantity of natural resources (gold in particular). Until the discovery of minerals, South Africa was a distant backwater with minimal economic prospects (Feinstein, 2005, p.2; Lumby & Coleman, 1983, p.100; Nattrass, 1981, p.23). The economy relied almost exclusively on agriculture, but the land offered difficult agrarian opportunities: low-grade soil; insufficient and irregular rainfall; disease; pests and wild animals; and land disputes with the indigenous population.

The discovery of diamonds and gold was the catalyst that combined these three features and shaped the development and structure of the economy. By being able to convince foreign nationals to invest part of the capital surpluses locally, South Africa developed secondary industries and did not get trapped in a cycle of extraction benefitting only a few Randlords who controlled the diamond- and gold-mining industries (Nattrass, 1981, pp.162–163), as was the case with elite landowners in South America. More than anything else, minerals have dominated the economy, influenced government policy and allowed for the transformation from a solely agrarian to an industrialised economy. This process is now examined more closely.

Agriculture to Mining: Benefitting from Cheap Labour

Dispossessed of their land, the indigenous population could no longer farm independently; thus allowing white settlers to control the labour supply. This they duly exploited, with African farm workers little more than slaves. Then, from 1850, as demand for wool and other products grew in the Cape and abroad, agricultural prospects rose, as did the need for additional labour. Labour-supply issues reached a crisis point when diamonds were discovered in the 1860s and gold in the 1880s, with Africans unwilling to succumb to the settlers or to work for what was being offered. This led to migrant labour being sourced, and as early as 1898, 60% of the workforce was from Mozambique (Nattrass, 1981, p.137). More was needed, and government and employers introduced three mechanisms to induce the local African population to work:

1. The implementation of a hut tax;
2. The enforcement of pass laws to restrict movement and bind labourers to employers; and

3. The continuous reduction of available agricultural land.

By 1911, mines were competing strongly for agricultural labour, with over 260 000 Africans employed by the mines, compared to 360 000 who worked on white-owned farms. Three practices, which developed in the diamond fields, were transferred to and entrenched in the gold mines:

1. Skilled labour was the exclusive preserve of highly paid white employees, while manual work was done by lowly paid African staff;
2. African workers were recruited as short-term migrants; and
3. These lowly paid employees were housed in closed compounds (Feinstein, 2005, p. 63).

Unsurprisingly, the per-capita income of whites in 1915 was 11 times higher than that of Africans (Holborn, 2013, p.10; Bhorat, 2001, p.2; Feinstein, 2005, p.13; Nattrass, 1981, p.139).

Of crucial importance is that, unlike any other gold reefs in the world, which were easily accessible alluvial reefs or veins of metal ore, the reefs discovered on the Witwatersrand (in 1884) had an unprecedented uniformity and continuity in their length and breadth but were not easily accessible or to be found in rich veins. In massive areas, minute quantities of gold were embedded in hard quartz rock extending at an angle from the surface to depths of a few thousand meters. Extracting such gold necessitated substantial quantities of labour.

The difficulty and high cost of mining gold on the Witwatersrand meant that the industry's formation was vastly different to that of diamonds. Owners of small claims soon realised that they weren't able to mine viably, and the industry consolidated into nine gold-mining houses which controlled the Witwatersrand Basin. A notable feature was that most of the gold being mined was not being used for industrial or commercial purposes, but to back international currencies; the gold price was fixed at US$20.67 per ounce from 1834 until 1934. Gold producers could therefore not drive up the price, as was done with diamonds, and thus there was no need to compete or enter into monopolistic practices to influence the price. The only way mines could increase profitability was to manage costs, of which labour was the biggest (Ross, 2008, p.72; Feinstein, 2005, pp.93–95; Trapido, 1971, p.55). Here, the discovery of substantial coal deposits in Boksburg (on

the Witwatersrand) in 1887 was also of major significance for the successful exploitation of gold, as it lowered transport costs through economies of scale (Lumby & Coleman, 1983, pp.176–177).

The "Poor-White" Problem

With the state and business controlling African employment as a highly cost-efficient labour source, a new emerging challenge was how to deal with the large number of destitute and uneducated Afrikaners who started coming off the land from 1900 until WWII. Partible inheritances and a deep suspicion of alien urban life had kept them on the land for many generations. But constant divisions and subdivisions of farms, and the massive destruction of farmland during the Anglo-Boer War (1899–1902), resulted in the land not being able to support families – forcing people into the towns, where English-speaking whites controlled skilled labour and Africans dominated unskilled labour.

Afrikaners were essentially unemployable and unable to live amongst their fellow whites, but also disinclined to compete with Africans for manual labour. The mining industry was also unwilling to employ Afrikaners as unskilled labourers, as they would not accept what Africans were earning and there was no justification for pay differences between the two for the same work. Such a situation led either to massive pay increases or unrest, both of which were unattractive to business. Bottomley (1993) estimated that by 1924 one in four Afrikaners had become "poor-white" and that this increased to one in two a decade later. The "poor-white" problem would thus dominate church and state attention for the next 50 years, as programmes and legislation were introduced to ameliorate it.

Indeed, the labour division that lasted until democracy in 1994, which was often explained as "skilled whites" and "poorly skilled" or "unskilled Africans", was not based on race 100 years previously. Unskilled labour consisted of both races and evolved to the present situation by design (Nattrass, 1981, pp.57–58; Bottomley, 1993, pp.1–2; Lumby & Coleman, 1983, pp.23–24; Feinstein, 2005, pp.83–85; Clark, 1994, pp.42–50).

4.3.2 SUPPLYING THE GOLD MINES WITH ELECTRICITY

Within such a complex context, development of the ESI took a somewhat unique but understandable path in South Africa. Mines needed large and concentrated quantities of power, and most

generation focused on satisfying this demand, with little attention paid to residents, especially in towns and cities bereft of mining activity (Cape Town, Bloemfontein, Durban and even Pretoria). Effectively, local authorities, which provided services such as electricity, water, gas, and roads, came to own and operate regional utility companies, while the practice of mines building their own power stations continued for the next two decades (Eberhard, 2007b, p.3).

In 1906, the Victoria Falls Power Company (VFPC) was formed, with the original intention of supplying Transvaal and Rhodesia with hydro-electric power. However, the urgency for power after the Anglo-Boer War, which had desperately delayed the project, ultimately led to the abandonment of the hydro-electric project. In the interim, it was decided to supply the Witwatersrand from steam plants using local coal. VFPC purchased Rand Central Electric Works and the General Electric Power Company in 1907, and had four thermal power plants by 1915, with an installed capacity of more than 160 megawatts (MW) (Eskom, 2009).

This rapid growth through supplying power to the mines, and its success, led to a name change in 1909: Victoria Falls and Transvaal Power Company (VFTPC). That this created a single supreme supplier did not go unnoticed by business and national government, who observed that it "might perpetuate a powerful monopoly" (Conradie & Messerschmidt, 2000, p.44). This threatened the interests of several important groups in the Transvaal (Christie, 1984, p.38) and led to the appointment of a Power Companies Commission in 1909.

Marquard (2006, p.144) summarises the Commission's findings as: 1) Conceding that there are significant economic advantages to the large-scale production of electricity; and that 2) Private investment could facilitate this; while 3) Supply by the private sector would lead to a "virtual monopoly in a commodity which has become practically a necessity of modern civilisation". Recognising that it could not build or finance a large power station, the Transvaal government decided not to act against the VFTPC, but exercised control through mandatory licences that allowed for expropriation after 37 years (later extended to 40) – a period considered sufficient for investors to recoup adequate gains on their invested capital (Marquard, 2006, p.146; Conradie & Messerschmidt, 2000, p.44–45; Horowitz, 1994, p.2; Christie, 1984, p.44; Mountain, 1994, p.65).

This was all achieved through the Transvaal Power Act No. 15 of 1910, which was written hastily and passed just three days before the province was amalgamated into the Union of South Africa. It became

the basis of government electricity policy in the consolidated country, with requirements of the Act including:

- The establishment of a Power Undertakings Board, which had the authority to license public power undertakings and their supply area; and
- An obligation for licensees to charge uniform rates, i.e., having regulated prices according to a supervised rebate system of annual "surplus" profits, which were re-distributed to consumers on a pro-rated basis of their consumption (Horowitz, 1994, p.2).

The Commission's report, which led to the publication of the Bill (precursor to the Act), pandered to the requirements of the gold-mining industry, and only then considered compromises to satisfy the needs of lesser groups such as the coal-mining industry and municipalities (Christie, 1984, p.43). Indeed, a proposal in 1907 for Johannesburg municipality to build a power station that would have absolute monopoly of supply within its jurisdiction, was rejected outright by Rand Mines, who believed that ratepayers would be tempted to tax the mines for the relief of rates (Christie, 1984, p.35).

Thus, the Act regulated all power companies supplying electricity to others, but bypassed municipalities who would continue to be regulated by the Provincial Administrators as per the provincial ordinances of 1905 (Mountain, 1994, p.65). The Act also introduced the concept of an electricity "undertaking", defined as an entity undertaking the generation and distribution of electricity in a specific area.

Local authorities were not required to apply for a licence in their jurisdiction, and other private-sector parties could apply for a licence, subject to this not being vetoed by the local authority. Section 5 of the Power Act excluded large users – mines, railways and government operations – from the local authority's area of jurisdiction. This provision meant the local authority could not veto such undertakings being supplied by other power generators, which gave VFTPC, and later Eskom, access to its primary consumer base.

Ultimately, the Transvaal Power Act was responsible for regulation, until it was superseded by the Electricity Act of 1922. However, with regards to licences and their attached conditions, the Transvaal Power Act was "effectively preserved" until 1995, as all subsequent legislation recognised the existing licencing conditions between Eskom and local authorities (Marquard, 2006, p.146).

Originally driven by the electrification of resource extraction, the Transvaal Power Act has fundamentally survived until today, by forming and facilitating the following path-dependent processes for ESI:

1. Its allowance for expropriation created the foundation for a national vertically integrated utility;
2. Cross-subsidisation arose as a financial consequence of uniform tariffs;
3. Municipal rights to generate and distribute electricity in their area of jurisdiction eliminated competition, as private companies had to apply for a licence;
4. Municipalities could not supply large users (mines, government and railways), even in their jurisdictional area, thereby limiting their revenue sources and compromising the ability to operate efficiently; and
5. It entrenched the techno-political "culture" in South Africa (see Jaglin & Dubresson, 2016).

Here, it is worth pausing to revisit the theory of path dependency. As we saw in the Introduction, path dependency suggests that the outcome of a process depends more on its history than on current conditions. Path dependency focuses on identifying specific patterns of timing and sequence, showing the importance of the specific sequence of small historical events which result in significant consequences. It looks at how people and institutions take actions that reinforce *stickiness* in creating lock-in, from which the institution cannot escape without the involvement of an outside event. Thus, the decisions taken over a century ago to regulate South Africa's ESI in a specific manner, for very particular reasons, have endured and continue to stifle or block much-needed reform.

4.4 THE UNION OF SOUTH AFRICA (1910–1948)

4.4.1 CREATING THE ECONOMIC RULES OF THE GAME

The Cape, Natal, Orange Free State and Transvaal came together to form the Union of South Africa because they realised it was the only way in which mining could be expanded and Afrikaners re-empowered after the Anglo-Boer War. In return for their loss of independence, and to avoid an over-concentration of political and economic power

in mining, it was agreed to allocate a primary national government function to each province. Cape Town (the Cape) became the legislative capital; Bloemfontein (Orange Free State) became the judicial capital; and Pretoria (Transvaal) became the executive capital. With nothing left to offer Pietermaritzburg, the province of Natal was compensated financially and made the agricultural capital of the country, which in reality amounted to little.[2]

Financially, the newly formed Union relied heavily on revenue derived from the gold-mining industry, which was charged a tax to fund the administration and development of the four provinces. This included roads, education for the white population, and other services. Any disruption in the revenue from the gold mines would impact heavily on the Union as a whole (Lumby & Coleman, 1983, p.186); and from 1920, marginal mines started considering hiring African workers for certain semi-skilled jobs reserved for whites.

The white miners would accept pay cuts but not dilute the white-to-African workers ratio, and eventually embarked on a strike (in 1922). This quickly became politicised, and 230 people died in the ensuing violence. Then, with the strike crushed, industry retrenched 2 000 white workers, began using Africans for semi-skilled jobs, and introduced new equipment which greatly improved productivity.

Immediately, mines reaped the benefits and profits returned. But there was a price to pay. The force shown by the government shocked many and resulted in greater support for the NP in urban areas, which up until then had been lacking. The NP, representing rural Afrikaners, formed a pact with the Labour Party. The latter was supported by poor English-speaking workers from the cities. This Pact government won the 1924 elections on a ticket of Afrikaner nationalism and assuring whites that they would not have to compete with Africans for unskilled jobs.

The government's "civilised labour" policy recognised white trade unions but not black ones, and the Industrial Conciliation Act of 1924 and the Wage Act of 1925 restored the previous racially biased policies and regulations, first started under President Paul Kruger in the Transvaal in the previous century (Nattrass, 1981, p.163; Lumby & Coleman, 1983, pp.186–189; Feinstein, 2005, pp.80–84; Bottomley, 1993; Archer, 1989). Meanwhile, industrialisation intensified, and in so doing constructed an Afrikaner economic power to parallel its political power.

Some of the first industries were founded as early as 1910, with the number of factories increasing from 550 to 1 500 in the period 1890 to 1910 (Lumby & Coleman, 1983, p.198). Industry benefitted when European factory output declined significantly with the outbreak of World War I (WWI), leading to increased local and international demand; and also from the introduction of a tariff in 1915 to disadvantage competing imports.

Consolidation and state ownership of railways, through the formation of the South African Railways and Harbours Administration (SAR&H), was followed by the decision to create Escom in 1923 to develop the country's ESI; providing further evidence of government commitment to industrialisation. In her research on industrialisation in South Africa, Verhoef (1998, pp.17–19) concluded that rapid industrial production occurred after the introduction of import substitution[3] by the Pact government in 1924; which is why after having set up Escom, Hendrik van der Bijl was asked to create the Iron and Steel Corporation (Iscor) in 1928, to further exploit the country's rich coal and iron-ore deposits.

As a product of this period, much of the manufacturing sector focused on the needs of the mining industry; with foreign exchange, earned from the sale of gold, financing the importation of capital goods and materials to develop the sector. Then, in 1929, the government's mining engineer classified minerals extraction as a wasting asset, which would decline until it no longer contributed to the country's gross national product. But fortune smiled in 1931 when Britain left the Gold Standard and devalued its currency, with the gold price going from 84 shilling to 125 shilling; as the US followed suit in 1933 and the price increased by US$14 to US$35 (140 shilling). These events resulted in a six-year expansion cycle for gold mining and over £80 million of foreign capital entering the country (Lumby & Coleman, 1983, p.191). On the back of the gold-mining boom, so too did the manufacturing sector flourish, growing at 9% per annum in real terms from 1936 to 1951; with new opportunities created by the outbreak of WWII and gross output doubling to £400 million (Feinstein, 2005, p.123) within ten years (1939–1949). And the biggest transformation during this golden period for manufacturing was the transition and evolution of the engineering sector, powering this growth.

For the third time, Van der Bijl was called upon to set up a new state entity. The Industrial Development Corporation (IDC) was created in 1940 to "facilitate, promote, guide and assist" (Cartwright, 1971) the

development of industry by the private sector through the provision of loans or equity. Tariff protection intensified and expanded, and it was no longer necessary to demonstrate market potential for the tariff to be granted. Industries that benefitted included agricultural implements, electric motors, yarn and cloth, pulp and paper, certain chemicals, and sheet glass.

However, the foundation on which the manufacturing sector rested was not sound. Firstly, the market was just not big enough to accommodate meaningful economies of scale; compounded by the purposeful exclusion of the African population, resulting in an oligopolistic market. Secondly, a key consequence of operating in a market where products were protected by tariffs and import quotas was the low level of efficiency. Here Feinstein (2005, pp.128–130) argues that a system based on discrimination and inequality was carried from the agricultural to the mining sector; and that while these two sectors could operate on a low-skill, low-productivity and low-efficiency basis, this approach could not support the development and sustainability of secondary sectors like manufacturing and construction. Another impediment created by the excessive use of tariffs to protect local manufacturing, as noted by Laight (1955, p.217), was that "despite all sophisticated evidence to the contrary, a policy of tariff protection can be expected to raise the price of these goods upon which duties are imposed and indirectly, the general level of prices and wages". Thus, mines were paying higher prices for locally manufactured goods. This increased their cost base but could not be passed on to the consumer, as the price of gold was fixed. Paradoxically, the competitiveness, or lack thereof, of the industrial sector, directly impacted the profitability of the mining sector on which it relied and had been specifically created to replace (Feinstein, 2005; Nattrass, 1981 & 1988; Bonner et al., 1993; Lumby & Coleman, 1983; Archer, 1989; Laight, 1955).

4.4.2 CONSOLIDATING THE ESI TO CREATE A STATE MONOPOLY

The Establishment of a Municipal Association for Electricity

Local authorities continued developing their electricity-supply infrastructure to provide residents with power, and up until 1922, the industry was made up of private and municipal enterprises (Horowitz, 1994, p.2). The large number of power suppliers resulted in chaotic conditions, with little legislation, regulation and standardisation; with a diverse range of provincial acts and municipal by-laws governing

the ESI. Different supply voltages were used across the country, and many consumers were supplied with direct current (AMEU, 1995, p.11; Steyn, 2001, p.62). To address this, 22 engineers from 17 municipalities came together to form an association to cater for the needs of municipal electrical engineers.

The Association of Municipal Electrical Engineers (known as the Association of Municipal Electricity Undertakings, AMEU, in 2016) was formed in 1915. At the second conference, held in 1917, the 31 members who attended discussed a wide range of topics. Among these were product standardisation, the conservation of energy resources, and most notably, the promotion of standardising income derived from electricity sales. From inception, the Association voiced its disapproval of the local government practice of electricity surpluses contributing to the relief of property rates, referring to it as "licensed robbery" (AMEU, 1995, p.16).

A Fork in the Track: How SAR&H Irrevocably Changed the National ESI

By 1916, the management of all railway lines and harbours in the four provinces fell under one entity, SAR&H. This provided focused impetus to electrify the railroads. In 1917, Sir William Hoy, the general manager of SAR&H, thus commissioned Merz and McLellan Consulting Engineers (MM) to conduct a study on the possibility and viability of railway electrification in South Africa (Marquard, 2006, p.146). The report considered the broader question of electrification and the economies of scale that could be achieved by supplying both railways and industry; warning against a fractured electricity supply, which was believed to have constrained economic growth in England (Horowitz, 1994, p.3); and recommending a centralised approach to regulate and unify electricity supply.

Sir Robert Kotze (who had undertaken the 1909 Power Companies Commission study and participated in the drafting of the Transvaal Power Act of 1910) was tasked with reviewing the findings. His committee supported the conclusions and expanded them to follow the English model, whose aim was to control and regulate the electricity industry.

Factors that the prime minister would need to consider included persistent strikes by miners and municipal power workers, the implementation of racial policies, working conditions, and the effects of WWI. But the real conundrum was set by SAR&H's Sir Hoy, who stipulated that while SAR&H had no intention of building its own

power stations, it was averse to procuring power from private suppliers or electricity undertakings (Jacobs, 1941, p.18).

The railways needed a reliable power supply, which was not certain from strike-prone municipalities. In addition, Hoy did not believe that municipal tariffs would be as "it might be" (Christie, 1984, p.55); meaning that beyond possible unreliability, he also regarded municipalities as potentially expensive, and was thus not willing to build railway lines where the electricity supply was municipal.

The makings of the trajectory to future events were thus in full motion at the time that the report was being written in 1921/22, within the increasingly unstable environment of the time; making SAR&H's demand for power from a trusted publicly owned utility more likely to convince the prime minister to implement the committee's recommendations. This took the form of the Electricity Act of 1922, and in Horowitz's view, reflected the call to secure reliable and cheap electricity supply, particularly for mining and railway electrification, within tumultuous times.

The objectives of the Act were to be achieved through the creation of Escom, whose mandate was to supply electricity to "Government departments, the South African Railways and Harbours Administration, local authorities, companies and other persons carrying on industrial undertakings or to any persons whatsoever in the Union" (Government of South Africa, 1922, Section 3[476]).

The Act also called for the creation of an Electricity Control Board (ECB) to license and regulate electricity undertakings. In future, all electricity undertakings would require a licence to generate and supply electricity. Government departments and local authorities supplying within their area of jurisdiction were exempted from obtaining a supply licence. The Act also established the general principle that Escom's undertakings "be carried on neither at a profit nor at a loss" (Government of South Africa, 1922). The Act thus set up the institutional structure for the creation of a large, single supplier of electricity for big industry and rural areas, but had to recognise existing municipal producers, who would retain the right to decide on urban electricity generation and distribution.

The Act, whether by design or not, protected the revenue stream municipalities enjoyed from the surplus derived from their MEUs. It also gave them the flexibility to abandon their MEUs by entering into pooling or other agreements with Escom, which many did. Furthermore, the right to expropriate power stations after 38 "plus two" years was confirmed, and Escom was granted water rights and

wide-ranging powers such as the right to expropriate land and streets for reticulation and distribution.

Finally, on request, the Act accorded Escom "expert status". This implied that any extension to an existing, or application for a new, power station by a municipality, could be referred to Escom by the Provincial Administrator. This gave Escom the ability to influence the final decision of a licence-application process based on its own vested interest. If an MEU planned to increase its generation capacity by an amount exceeding 10% of its existing output in any 12-month period, the Act required an Escom evaluation to ascertain whether it could supply ratepayers more advantageously (Government of South Africa, 1922, Section 38).

The Provincial Administrator was not bound by Escom's recommendations, and in 1936, in advising the Johannesburg municipality, MM believed adjudications would be fair (MM, 1936). This was based on precedents of the Administrator adopting decisions contrary to Escom recommendations, but turned out to be an overly optimistic assessment, as Escom recommendations "invariably carried the day" (Conradie & Messerschmidt, 2000, pp.74–75).

VFTPC Expropriation and the Rise of Escom

The newly formed Escom wasted no time in exerting its authority. It immediately opposed the VFTPC's application to build a major power station in Witbank, even though Witbank had large quantities of coal, and technical advances in long-distance transmission made such a plant viable. Escom argued that the VFTPC would make large profits at the expense of mines and industry. A compromise was reached whereby the VFTPC would design, build and operate the plant, but Escom would own it. The VFTPC also agreed to share mining revenue with Escom. The plant was completed in 1926, and although very lucrative for the VFTPC, as the company didn't have to make any capital outlay for it, it was the beginning of the end of the VFTPC's operations in South Africa. All future power stations were built on this basis, until expropriation was invoked and the VFTPC's assets were sold to Eskom for £14.5 million in 1948 – the single biggest financial transaction in South Africa at the time.

The expansion of the SAR&H network had provided the base load needed to make Escom's regional undertakings viable; and thus, by 1948, Escom was the main supplier of bulk electricity in the country (Marquard, 2006; Horowitz, 1994; Conradie & Messerschmidt, 2000).

Having essentially disposed of the VFTPC, Escom now turned its attention to the MEUs, which is detailed in later sections.

4.5 THE APARTHEID YEARS (1948–1994)

The Golden Years of Gold (1948 to the Early 1970s)

The government, with the help of Van der Bijl, developed a new basis of operation for state corporations: monopolisation of the markets and fragmentation of the workforce, achieved through the physical decentralisation of industry. In this way, the state could control markets and labour (Bonner et al., 1993, p.77; Addleson, 1990, p.102). To this end, the IDC facilitated the creation of monopolies in the industries in which it invested, crushing local competition by being the lowest-cost producer. The IDC also funded the Phosphate Development Corporation (Foskor), which manufactured industrial fertilisers, and then the South African Coal, Oil, and Gas Corporation (Sasol) was set up to convert coal into gas and then gas into petrol. These projects were too large for the private sector and also strategic – providing perceived protection against sanctions.

The diversification of the economy was evidenced by the manufacturing sector contributing more to the country's GDP than the combined contributions of the mining and agriculture sectors for the first time, in 1954. However, these results were largely driven by a period of sustained global economic growth following the end of WWII and the discovery of substantial new sources of gold and other resources (coal, uranium, copper, iron ore and platinum). The country's fortunes turned in the early 1970s though, for three reasons:

1. The reduction in gold output as mines aged, reducing the much-needed foreign exchange to import capital equipment;
2. The global oil crisis and increasing political hostility to apartheid; and
3. Undoubtedly and most importantly: the country's low level of efficiency and high cost of production in the industrial sector. (Feinstein, 2005, p.202; Lumby & Coleman, 1983, p.227; Verhoef, 1998; Nattrass, 1981; Clark, 1994; Laight, 1955)

Apartheid's Inevitable Economic Collapse (Early 1970s to 1994)

By 1970, South Africa's industrial structure had experienced significant sophistication. Large sums had been, and were being, invested in the

country's infrastructure. More than 5 000 kilometres of tarred roads had been delivered by the late 1960s, with a further 6 000 kilometres commissioned. Dedicated rail lines serving the mining industry had been built. Escom was in the middle of one of the world's biggest new build programmes, with 3 500 MW under construction in 1969 and plans underway to add a further 25 000 MW by 1979 (Marquard, 2006, p.155).

Manufacturing too had progressed beyond the first phase of producing consumer goods, to now produce intermediate and capital goods. However, two factors meant it was unable to achieve autonomous growth and independence from mining, and to a lesser extent, agriculture:

1. Continued reliance on imported goods and raw materials to deliver final products; and
2. The limited international demand for locally produced products.

Thus, industry continued to rely on the foreign revenue earnings from the primary sector. A new strategy was needed.

The 1971 Reynders Commission, appointed to investigate export trade, concluded that the economy would have to re-orientate from import substitution to the promotion of exports – "the country appears to be confronted with a fundamental choice: a lower rate of economic growth or more intensive efforts to increase exports" (Reynders, 1972, p.18). Market-orientated trade policies were accelerated, but instantaneously highlighted the inefficient state of local manufacturing after decades of protectionist government policy (Ratcliffe, 1975, p.45), which masked skill shortages, high costs and low productivity.

If South Africa was to maintain, let alone increase, its exports, its industry needed structural reform. The answer was seen to be greater beneficiation of primary products and developing the capability to produce more sophisticated and competitive goods. Government targeted specific sectors; most notably chemicals, textiles, and the motor vehicle industry, all of which received incentives, tax subsidies and other support mechanisms. However, there was also strong empirical evidence at the time to suggest that export incentives do not necessarily result in increased export or manufacturing volumes (Feinstein, 2005; Verhoef, 1998; Addleson, 1990; Lumby & Coleman, 1983; Nattrass, 1981; Laight, 1955; Reynders, 1972; Ratcliffe, 1975 & 1979; Bell, 1975; Smit, 2009; McCarthy, 1988).

In many ways, dominance of the mining sector in the overall

economy had made changes in strategy more difficult. Industrialisation had taken a very particular form, which had evolved and become entrenched. This phenomenon, unique to South Africa, was termed the "Minerals-Energy Complex" (MEC) by Fine & Rustomjee (1996). Under the MEC, industrialisation was driven by mineral extraction and energy generation, with downstream sectors and linkages amongst them developing to support it, including financial services.

4.5.1 THE DEVELOPMENT OF THE NATIONAL ESI UNDER THE "NATS"

Phase I: Market Domination and Consolidation (1948–1957)

The year 1948 brought profound change. The NP, or "Nats" as its members were collectively termed, narrowly won the national election. This was followed by the deaths of the chairman of the VFTPC, Bernard Price, and Hendrik van der Bijl.

For the period 1945 to 1959, Escom's total generating capacity grew from 1 217 to 3 297 MW. The utility's number-one priority was supplying the mines with cheap and reliable power, on the basis of neither profit nor loss, and this was a key reason why industry supported the expropriation of the VFTPC. The mining industry was thus able to influence Escom's investment decisions, in a practice that continued until the 1980s. Escom could not build fast enough, and demand often outstripped supply, resulting in power outages. These were managed by emergency rules, supply agreements with the mines, and mutual standby assistance pacts with generation plants owned and operated by municipalities.

During this decade, municipal power supply was valued by Escom, and there was a good working relationship between the two, evidenced by Escom not objecting to any municipal building applications referred by the Provincial Administrator for power stations; most notably, Johannesburg's Orlando (pre-1948) and Kelvin A and B (post-1948) Power Stations (Eskom, n.d.; Marquard, 2006, pp.152–154; Conradie & Messerschmidt, 2000, pp.105–119; Steyn, 2001, pp.70–73; Christie, 1984, p.155).

Phase II: Escom Takes Control (1957–1973)

Escom's build programme continued unabated, and generation moved to the large coal fields in the Eastern Transvaal (now Mpumalanga). Existing 60 MW generation units were replaced with 200 MW units. Costlier but more-efficient dry-cooling technology, which used eight

million litres less water per day, was introduced with these new units. Escom persevered with its build programme and was rewarded when technology advancements unlocked mining at a depth of more than 1 500 metres. By 1970, Escom's sales increased by 105%, which included a fourfold increase to municipalities. Moreover, Escom prioritised a national interconnected system, which it completed in 1972, that allowed for mega generation plants to be built adjacent to where the coal was mined (Conradie & Messerschmidt, 2000, pp.113–143).

Escom's culture of continuous expansion, which created economies of scale, reduced the price of electricity, and it now turned its attention to municipalities, where demand was growing. By its own reckoning, Escom was the designated national generator of electricity and it was no longer prepared to support, or abstain from objecting against, new municipal generation applications submitted to Provincial Administrators.

The 1960s then saw the "right-of-supply" battle between Escom and the large municipalities, who owned and operated their own generation plants, which we detail in the next chapter. Escom, with the tacit support of national government, won. Henceforth, municipalities would retain their distribution rights, but would no longer be permitted to build any new generation plants. This arrangement remains in place, but in 2020 is being contested in court, in what may prove to be a landmark decision.

Phase III: Escom's Golden Years Quickly Turn to Crisis Years (1973–1985)

Escom's significant achievements led to hubris. The downturn in the global, and more specifically, the local economic and political climate from 1973, did not deter Escom's decision to maintain its build-rate plans of 7 to 8%. However, its fleet base was now sizable, which meant bigger and more complex plants. New power stations were also plagued by technical problems and accidents, resulting in additional costs (funded by increased tariffs) and delays (causing shortages and blackouts).

Low electricity prices, to stimulate economic growth, could no longer be sustained, and tariffs started increasing steeply from 1975 – by up to 30% and 45% in nominal terms per annum (Steyn, 2003, p.1). External financing following the 1976 Soweto Riots also became uncertain, and by 1977, electricity cost 166% more than it did in 1971. Another feature of Escom's approach to tariffs was the absence of a fixed cycle or set date for increases. For example, tariffs would remain fixed for periods exceeding one year, followed by two increases in short

succession (Table 4.1). This played havoc with municipal and end-user budgets.

Table 4.1: Escom Tariff Increases versus Consumer Price Index (CPI) (1973–1986)

Month and Year of Increase	CPI Increase (%)	Electricity Increase (%)	Months Since Previous Increase
April 1973	4.67	7.5	–
April 1974	9.82	1.1	12
January 1975	11.38	16.2	9
April 1976	14.60	15	16
September 1976	4.46	13	6
January 1977	3.05	25	4
January 1978	11.24	14.5	12
January 1979	11.70	4.1	12
July 1980	21.90	7.3	18
January 1981	7.42	5.5	6
January 1982	14.18	13.1	12
July 1982	7.64	6.6	6
January 1983	6.21	14.5	6
January 1984	10.31	6	12
January 1985	13.89	10	12
September 1985	11.75	10	9
January 1986	8.13	10	4

Source: *Baasch (n.d.)*

Eventually, Escom's practices became the subject of two commissions of inquiry, beginning in 1977 with the Board of Trade and Industries (BTI) investigating the "suitability of the tariff policy and structure applicable to the supply of electricity in South Africa". The Inquiry found that Escom and municipalities were under-regulated, and that the ECB lacked sufficient capacity. The ECB was enlarged and its budget increased. The Inquiry also raised grave concerns regarding Escom's archaic accounting methods, lack of budgeting and management control. Turning to municipalities, the level of profits on electricity tariffs (used for the relief of rates), was also noted.

Decades later, Steyn's (2001, pp.80–94) analysis concluded that

Escom was ultimately able to undermine the BTI findings by asserting that the Inquiry had misinterpreted its accounting practices. It simply responded to the high tariff increases by running at a loss, to be recovered in future years. This tactic only bought time though, and in 1980, high-tariff increases were resumed (Table 4.1). Between 1979 and 1982, the bull-run on gold and the uncharacteristically cold winters increased demand, and Escom had to resort to planned and unplanned power outages, while developing plans to treble its capacity to 70 000 MW at a cost of R65 billion (Steyn, 2001, p.79). These were announced in 1983, but by then the bull-run had ended and the economy was weakening.

Then, the second inquiry into the supply of electricity, under Dr W.J. de Villiers (after whom the report came to be known), addressed concerns regarding increasing electricity tariffs and the amount of capital required for the provision of electricity. The Inquiry proposed, among other things, a new management structure, improved operational performance, and that Escom could no longer operate at "neither a profit nor a loss". The report was accepted in full by Cabinet on 20 November 1984.

Phase IV: Regeneration (1985–1994)

State President P.W. Botha appointed Johan Maree as Escom chairman in 1985 on the basis of Maree's vast financial and business acumen, and Dr Ian McRae as Escom's chief executive; tasking the two with reviving the utility. The De Villiers recommendations were enacted through legislation (Eskom Act No. 40 of 1987, and Electricity Act No. 41 of 1987), and the utility was henceforth known as "Eskom" (a combination of the English "Escom" and Afrikaans "*Evkom*"). The underpinning objective was to privatise state-owned enterprises; but with the fall of P.W. Botha (who supported the international trend of privatising state assets) and the start of secret negotiations with the ANC (detailed below), this initiative was dropped.

Under Maree and McRae, changes were immediate. The utility's management culture transformed from engineering-dominated to more balanced and commercially oriented. Between 1986 and 1989, over R2 billion was eliminated from Eskom's budgets, with the workforce reduced from 66 000 to 40 000 by 1993. Given the political turmoil engulfing South Africa, the combination of cost savings and improved management could not have come soon enough, and eased the tension between national government and the private sector. These successes were important and allowed the new management team to

achieve its over-arching objective, manifested in the now-infamous quote: "keeping government out of the engine room". Politicians were appeased by favourable comparisons when Eskom was benchmarked against international utilities, and when the utility entered into a price compact in 1991 that allowed an initial 9% increase followed by a cumulative 20% reduction over the next five years (Marquard, 2006, p.172; Conradie & Messerschmidt, 2000, p.254; Steyn, 2001, p.110).

In a more balanced assessment, Steyn (2001, Chapter 5) agrees that the reforms visibly improved governance at Eskom. However, the long-standing practice of over-investing in power plants was not stopped, just delayed; and although the other cost-cutting and governance measures helped, it was ultimately the time delay that improved Eskom's financial state. Of the six power stations being planned, only one, Lekwe, was cancelled.

Years of over-investment in generation plants finally overtook demand, and in 1991, Eskom's total sent-out rating was 36 228 MW, against a peak demand of 22 342 MW. The first half of the decade saw no growth in consumption, and for only the third time in Eskom's history, demand declined – by 0.4% in 1992; all while new stations were coming online. Thus began a programme of decommissioning older and more-expensive/less-efficient plants; six plants with a combined 5 000 MW capacity were mothballed by 1991 (Horowitz, 1994, p.13; Steyn, 2001, pp.113–122; Conradie & Messerschmidt, 2000, p.260).

More needed to be done to soak up the excess supply, and a marketing department, established in the mid-1980s, immediately started an aggressive campaign. Agrelek, which targeted farmers, convinced them to switch to electricity for all their power requirements, such as for crop spraying, drying, and irrigation pumping. Then, using Agrelek as a blueprint, Eskom introduced Industrelek (industry), ElektroWise (households), ElektroServe (service and hospitality), and UtilitiMark (bulk resellers). Eskom entered into long-term supply agreements with five municipalities, which displaced 940 MW of municipal generation, at discounted rates. Eskom also offered industry discounted tariffs to increase its electricity consumption and capital expenditure; these cheaper tariffs would apply for as long as Eskom had surplus supply – estimated at ten years. Finally, Eskom entered into long-term supply agreements with large energy-intensive users in the ferro-alloy and aluminium sectors, which would later come back to haunt it, most notably an aluminium smelter in Richards Bay in 1991 and another in Mozambique in 1997 (Conradie & Messerschmidt, 2000, pp.285–287; see Jaglin & Dubresson, 2016).[4]

National Electrification Programme (NEP)

Living conditions for the black population were dire during this period, and a trip to a township by McRae in the early 1980s both appalled and convinced him that such levels of poverty constituted the greatest threat to peaceful political transition. Thus followed multiple undercover and at the time illegal meetings with the ANC (McRae, 2006); and in 1989, McRae announced the utility's commitment to "electricity for all". This included a scheme to assist municipalities with the electrification of black townships, declaring a target of connecting one million homes over a period of five years. Eskom's decision to act in advance of political events was bold, sincere[5] and in alignment with Eskom's business interests. By supplying a new untapped market, it was simultaneously forging relations and trust with the government-in-waiting, to retain organisational autonomy ("keep them out of the engine room") (Marquard, 2006; Conradie & Messerschmidt, 2000; Steyn, 2001; McRae, 2006; Bekker & Marquard, 2008).

"Electricity for all" was easier said than done though. Eskom was a bulk supplier with limited distribution to rural/semi-rural[6] and farming communities, and additional, supplementary issues included:

- Regulation;
- Access to communities;
- Vandalism and theft;
- Post-payment resulting in unaffordability and non-payment;
- Cross-subsidisation; and
- Political resistance.

Results were mixed. On the positive side, installation costs reduced dramatically; Readyboards[7] with pre-paid meters improved user budget management; and access to communities was enhanced. Conversely, scepticism remained, especially from provincial administrators who believed a precedent for free electricity was being set. Electricity bills were also bundled into municipal bills and became the target of rent boycotts. As early as 1988, Soweto was already R10 million in arrears, but supply could not be cut, for fear of the political and international fallout (McRae, 2006, pp.88–93).

The most contested area and ultimate Achilles heel though, was Eskom's old foe, the municipalities. Having taken the initiative, Eskom at first was able to target highly populated urban areas, which had the

greatest potential for low-cost connections. And as the electrification initiative gained acceptance and became an imperative, the process started to formalise. For example, the National Electrification Forum (NELF) was formed in 1993, at which Eskom came to an agreement with the ANC that it would electrify 2.5 million homes between 1994 and 1999 (Bekker & Marquard, 2008, p.17).

With the municipalities now inherently involved though, Eskom started to find it increasingly difficult to access urban townships controlled by them. Simultaneously, rural areas had lower densities, higher poverty rates, and consequently much lower consumption levels. So, the benefit of increased connection, according to Mick Davis, former Eskom director of finance, was questionable; and public funds could possibly have been used in a manner that provided greater benefit (Steyn, 2001, p.113).

4.6 DEMOCRACY – AT LAST!

4.6.1 ECONOMIC DEVELOPMENT

By 1994, the NP had ravaged the economy with its futile attempts to protect apartheid:

- GDP had shrunk for three consecutive years (1991–1993);
- GDP per capita and investment rates were declining;
- There had been a negative balance on the financial account for nine consecutive years;
- The budget deficit was 9.5% of GDP;
- Public-sector debt was 64% of GDP; and
- There was little room for additional spending (Roberts, 2006, p.1).

This then was in part responsible for the ANC adopting a post-1994 neo-liberal economic policy, whose primary objectives were to lower and manage inflation, reduce the budget deficit and support trade liberalisation; abandoning the previous long-standing rhetoric of a centralised economy.

How this evolved, bears closer examination.

Deciding on a Developmental Ideology: The RDP

In 1989, the ANC had few formulated political and economic policies;

all were open to interpretation and relied heavily on the 1955 Freedom Charter. During transitional negotiations though, it soon realised it needed to develop a detailed economic policy to respond to concerns of, and pressure by, various groups. This included the ruling NP, with which it was negotiating; the local (white) business community; and the international community, led by the World Bank and the IMF, which espoused neo-liberal economics. A tussle ensued amongst the members of the so-called tripartite alliance, made up of the ANC, the South African Communist Party (SACP) and the Congress of South African Trade Unions (COSATU). Grassroots activists in each organisation continued to advocate a radical economic policy of nationalisation, curbing the power of large national business and limiting the extent of foreign investors' influence. Work commissioned to develop economic policy between 1991 and 1993 ranged from the Macro-Economic Research Group (MERG), to the Industrial Strategy Project (ISP). MERG provided an alternative approach to neo-liberal economics. It aimed to demonstrate that organisational, technical and infrastructural capacity existed, and that the creation and development of manufacturing exports was a viable vehicle for economic growth. Ultimately, the ANC settled on the investor-friendly neo-liberal-leaning RDP as its official economic policy going into the 1994 elections (Williams & Taylor, 2000; Habib & Padayachee, 2000; Nattrass, 1994a & 1994b; Carmody, 2002).

From RDP to GEAR to ASGISA

Early disappointment in the lack of impact of the RDP saw the ANC introduce its new macroeconomic policy in 1996: the GEAR framework, which, it was planned, would increase annual growth by an average of 4.2%, create 1.35 million jobs by 2000, grow exports by 8.4%, and significantly improve social structures. The policy was however heavily criticised for being developed by a small team of technical experts who did not consult with any parties or share their economic models.

Under GEAR, Carmody (2002, pp.258–259) found government's approach to globalisation to be contradictory. While the government pursued a much tighter fiscal policy than proposed in GEAR, with tariff reductions exceeding those required by the World Trade Organization (WTO), the Labour Relations Act of 1995 introduced stricter market regulation. This combination of higher labour costs and losing long-held tariff protection, at a time when India and China entered the global trading system on a large scale, highlighted just how uncompetitive

and unsuccessful South African industry was at exporting goods. It was an industry enabled by gold mining (Freund, 2010) and "which grew behind tariff barriers and languished there" (Nattrass, 1994a, p.520).

GEAR, then, didn't even come close to meeting its objectives. Plans to rapidly privatise state-owned enterprises stalled, as investors didn't step forward and trade unions opposed their sale. On GEAR's failure, Weeks (1999) concluded that fiscal contraction and high real interest rates were the cause; and Carmody's (2002, p.256) research found that by 2002, more than half a million jobs had been lost, in contrast to the 600 000 that were to be created.

Next, in 2003, President Mbeki introduced the Accelerated and Shared Growth Initiative for South Africa (ASGISA) to link the two disparate economies created under apartheid (first and third world). Optimistic targets and programmes were included in the policy framework when it was launched in 2006, but these came under immediate scrutiny for offering little that was new, being overly optimistic, failing to create consistency amongst ministries, and having inadequate financial resources (Gelb, 2007; Bell, 2006; Davies & Van Seventer, 2006; Frankel & Sturzenegger, 2007; Hausmann, 2008; Nattrass, 2008). Ultimately, ASGISA never got off the ground, as President Mbeki was replaced in 2008 by President Motlanthe, who was followed by President Zuma in 2009.

A New President with a New Set of Ideas

President Zuma rapidly introduced a planning commission in the Presidency, and formed a new ministry, the Economic Development Department (EDD), which was mandated to develop policy for the Department of Trade and Industry (DTI). This though created the possibility for conflicting policy development, as well as issues around where the balance of power would lie (Nattrass, 2008, p.12). Three major strategy documents were produced:

1. The Industrial Policy Action Plan (IPAP) by the DTI;
2. The New Growth Path (NGP) by the EDD; and
3. The National Development Plan (NDP) by the National Planning Commission.

A review, not a critique, undertaken by the Centre for Development and Enterprise (Kaplan, 2013) found that although all three strategies prioritised employment growth and had some alignment, significant differences existed between IPAP and NGP on one hand, and NDP

on the other. The differences underpinned and informed the varying policies proposed by each, and it was crucial that the most appropriate policies be selected if government strategy was to be coherent and effective.

Employment Equity and Broad-Based Black Economic Empowerment (B-BBEE)

Of course, throughout the post-1994 era, the inequity of employment and personal economic development opportunities has remained one of apartheid's key legacies. The first democratically elected government needed to urgently address this issue in order to ensure that political change also brought tangible financial transformation.

Several pieces of legislation were promulgated to address the domination of whites, and specifically of white males, in the workplace. Of these, the Employment Equity Act of 1998 started the process of providing preferential access for African people,[8] women, and those with disabilities, through affirmative action. And although significant strides were made in state-owned entities and government, this was not to be the case in the private sector. This became a major thorn of emotive contention between public and private sectors.

In this context, the different perspectives on employment equity, a major national debate, are succinctly captured in the findings of a detailed study commissioned by the Department of Labour (Bezuidenhout et al., 2008), which shows two contending arguments. The first states that racial imbalance persists in the private sector, and that an unwillingness to implement national government policy and legislation is hindering employment equity – with high levels of unemployed, mainly African graduates, bearing testament to it. This is then countered by the private sector, which points out that "… the major obstacle to employment equity is the lack of skill among designated groups.[9] Companies that have aggressively implemented targets, such as Eskom, have had to suffer the consequences of rising levels of incompetence" (Bezuidenhout et al., 2008, p.64).

The research for this book has found evidence to support both viewpoints. In short, the public and private sectors are concurrently found wanting in their commitments to genuine transformation and skill development.

4.6.2 THE NATIONAL ESI: TO RESTRUCTURE OR TO REFORM?

Setting the Scene

A change in the leadership of Eskom in early 1994 coincided with the democratic transition in South Africa; Eskom's board opted to replace McRae a month before the elections (Conradie & Messerschmidt, 2000). At the same time, reforming the ESI was high on the ANC's agenda. The new government eventually formulated and outlined this reform in 1998 in the White Paper on Energy Policy.[10] This sought to:

- Continue with the electrification programme while ensuring access was provided at affordable rates;
- Improve energy governance through increased government co-ordination and planning;
- Stimulate economic development through enabling legislation; and
- Facilitate the introduction of greater competition.

Its key objectives were to bring about cost-reflective tariffs and regional distributors; and to promote energy efficiency through an integrated planning approach.

Energy policy aligned with government's overall neo-liberal macroeconomic approach and was aimed at liberalising power generation, to mitigate risks associated with a single-supplier model. The Eskom Amendment Act of 1998 vested Eskom's equity in the state, repealed its tax-free status, and formed it as a limited-liability company with share capital. The private sector was targeted to generate 30% by 2004, and government signalled its intent by contracting consultants to design an electricity market in which electricity generators, traders, and power purchasers could transact with each other on a variety of platforms and enter into bilateral contracts that ensured fairness to all parties. The market design would facilitate both physical and financial hedging. A transparent and independent governance mechanism would be needed to oversee such transactions. Eskom would recoup its lost revenue through entry into the continent. Figure 4.1 represents the future structure of the ESI as envisaged by Cabinet (Eberhard, 2005b, p.5315).

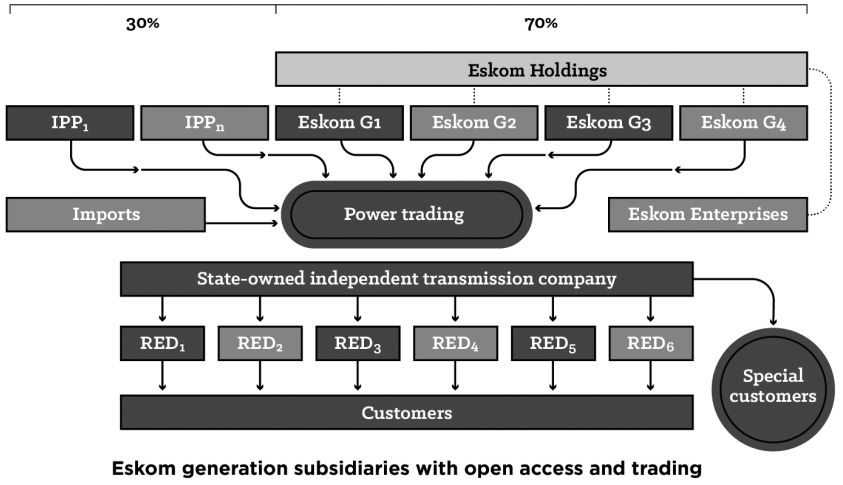


Figure 4.1: Proposed ESI Structure Based on 2001 Cabinet Decision

Source: *Eberhard (2005b)*

Officially, Eskom had to comply with its shareholder's instruction and began ring-fencing its operations. Internally, however, it was a different story. After many decades of being the only game in town and controlling the ESI, it wasn't going to go down without a fight – manifested by lobbying at the most senior political level and carefully crafted public statements: "Eskom has the lowest electricity price in the world, and excellent technical performance when benchmarked against the rest of the world. We need clear objectives as to why we are going this route" (Chalmers, 2001).

In this, Eskom found an unlikely ally in organised labour, who objected to the proposed reforms on the ideological standpoint of anti-privatisation and who embarked on national strikes against government's plans and apparent lack of transparency. The lead union, COSATU, estimated that over five million participated in the action. Eskom's consumers were also strongly opposed to privatisation plans (Ashe, 2002; Coetzee, 2010), with some fearing the loss of their discount-rate deals. Fate also played a role: the California energy crisis and Enron's failure in late 2001 was a godsend which strengthened the anti-reform cause. NT announced the postponement of the privatisation programme, and after the 2004 national elections, government announced that Eskom would not be selling assets, but would still seek private-sector power producers to build and operate up to 30% of new supply.

Private-sector investments into new generation did not materialise, though, due to inappropriate legislative frameworks and opposition to privatisation. By this time, Eskom's reserve margin declined to ~5% in 2004. Something had to give; and it did when demand outstripped supply and the first blackouts were experienced (McDonald, 2009; Eberhard, 2000 & 2005b; Pickering, 2010; Chettiar et al., 2009; Kessides et al., 2007).

National Blackouts and Eskom – "There is No Crisis!"

> We shouldn't frighten ourselves too much. Yes, indeed, there was a problem … but there is no crisis. Whatever needs to be done to make sure that the economy grows and new investors come into the economy is being done. We shouldn't be holding out as threats to local and foreign investors that something disastrous is going to happen … (President Thabo Mbeki addressing Parliament after the 2006 blackouts in the Western Cape)

It should not even be contemplated that the national blackouts came without warning. As far back as the mid-1990s, Eskom notified government that the existing fleet of power stations would be inadequate by 2007, and that to avoid a supply shortage, construction would need to start before 2000. That this was recorded in the White Paper serves as its tacit acknowledgement. But with a government moratorium in place, Eskom could not act; until in 2005, with the entire electricity system under serious threat and imminent collapse, it was ordered to construct the 9.6 GW (Medupi and Kusile) needed. Unfortunately, 2005 was truly too late. The system, under persistent increasing strain, started to crack, and the first blackouts occurred in Cape Town in November 2005.

Finally, in November 2007, the country ran out of power. Eskom's neglected plants were failing, and as much as 25% of its 39 GW generating capacity was not functioning (Fig, 2010). This was exacerbated by:

- Low stocks of coal supplies;
- Poor quality of coal;
- Logistical coal-supply issues;
- Heavy rains;
- Insufficient maintenance of power plants; and
- Poor planning and demand forecasting (Chettiar et al., 2009; Kessides et al., 2007).

Load-shedding was implemented nine times in November and December 2007; and national rolling blackouts commenced on 24 January 2008. It took Eskom a fortnight to stabilise the grid, but blackouts continued until June. A national emergency was declared. The economic effect was devastating, with load-shedding costing the economy R2 billion per day (Jaglin & Dubresson, 2016; CDE, 2008; Styan, 2015).

In response, Eskom installed 2 GW of diesel turbines, and it ramped up its Demand-Side Management programme, which had until then existed in name only. As soon as the system was stabilised, however, maintenance would be neglected; and the cycle repeated itself, with the entire system coming close to collapse on 30 June 2014. On 30 October in the same year, Eskom's biggest clients were instructed to reduce consumption by 10%; while levels of load-shedding were allocated numbers (1, 2, 3 and 4) to better communicate the severity of particular shortages to the public. In total, there were 56 days of load-shedding between January and April 2015, with the minister warning that load-shedding would continue for the next 18 months (Jaglin & Dubresson, 2016, pp.72–75; Government of the Republic of South Africa, 2014).

For Eskom, the financial consequences were as severe as the technical ones were. There were massive budgetary overruns in the construction of Medupi and Kusile, Eskom operated its costly gas turbines for long periods, and its personnel benefitted from high-remuneration packages. With no provisions for new power stations, Eskom turned to its tariffs, as it has always done (Figure 4.2). Between 2007 and 2015, tariffs in real terms increased by 170%, and would have been higher if NERSA had not capped requested tariff increases.[11]

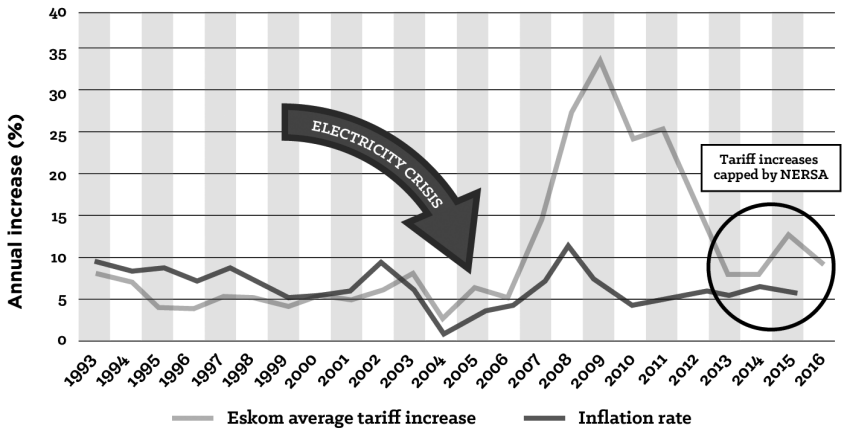


Figure 4.2: Nominal Annual Eskom Tariff Increases and Inflation Rate (1993 to 2016)

Source: *Stats SA and Eskom*

Ironically, perhaps predictably, the electricity crisis created the conditions for IPPs to enter the market with Renewable Energy (RE) generation; and NERSA approved a Renewable Energy Feed-In Tariff (REFIT) for certain RE technologies[12] in 2009. In 2011, the programme was taken over by NT and the DoE, who shifted to a competitive bidding process, but with a much larger ambition. Additional mandatory criteria were introduced, namely job creation, prescribed minimum local content requirements (to support local industry), local economic development, and black ownership. Known as the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), it was well received; by September 2016, 6 376 MW of RE had been procured from 102 IPPs – 2 738 MW of which had been connected to the national grid (IPP Office, 2016). This contrasts with Medupi and Kusile, which were plagued by cost overruns and delays. Medupi was expected to cost R56 billion, but the budget increased to R105 billion; the station's first unit (800 MW) was initially planned to be commissioned in mid-2011, but this only took place in 2015 (Crookes, 2015). As of December 2016, no additional units had been commissioned.

Eskom in Constant Crisis

Throughout this period, Eskom, and indeed the ministries which oversee it, have been subjected to relentless political interference. Between 2005 and 2017, the chairman of the Eskom board has been

changed six times and its CEO ten, while the DoE has had five ministers and the Department of Public Enterprises three. These events have led to a lack of continuity, to instability and a loss of confidence at best, and near catastrophe at worst. In this, Eskom's crisis can be crudely explained as the realisation of McRae's fears – government had finally made it into, and taken control of, the engine room (for a detailed account of these events, see *Eskom: Electricity and Technopolitics in South Africa* [Jaglin & Dubresson, 2016] and *A Historical Institutionalist Analysis of the Evolution of South Africa's Municipal Electricity Sector Within the Broader Electricity Supply Industry* [Covary, 2020, Chapter 5]).

4.7 CONCLUSION

Insofar as countries are unique and each follows its own developmental path, similarities exist and broad generalisations can be made. Seen in this light then, South Africa's three characteristics of a large indigenous population, a sizable European settler populace, and huge mineral wealth, distinguished it from other resource-rich countries, who only had combinations of these. And although minerals were discovered prior to the formation of the Union of South Africa in 1910, when the British formally exited the scene, their influence on political and economic structure endured.

Since then, as identified in this chapter, three distinct periods have existed, each one controlled by one of the three major population groups:

1. The English-speaking white population until 1948;
2. Afrikaner nationalists under apartheid from 1948 to 1994; and
3. The black majority, through the ANC, from 1994 onwards.

Here the research findings suggest that no ruling group has enjoyed total impunity, as it has always been kept in check by one or both of the other groups; a key consequence of this is that every successive ruling group has usually chosen to adapt existing, and not develop new, policies to prioritise its electorate and interests, entrenching and perpetuating path dependency. This has seen policies and structural frameworks survive, with little or isolated true reform introduced. Together with the stranglehold of the MEC on the economy (although waning), this is possibly the reason why the way "things are done" in South Africa has undergone little transformation. Several systemic weaknesses have repeatedly surfaced over the decades, but responses or solutions have in most cases been superficial, regardless of the

population group in control of government. Table 4.2 illustrates how recurring issues present themselves and resurface over time.

Table 4.2: Summary of Findings of South Africa's Political Economy (1910 to 2016)

1910–1948 "English-speaking Randlords"	1948–1994 "Afrikaner nationalists"	1994–2016 "Black elites"
Labour		
White labour represented by labour unions. Semi-skilled and skilled labour reserved for whites only Challenge to white labour resulted in a shift to conservative government in 1926 which introduced "civilised labour" Capital and even the state sought to circumvent policy by training Africans Economy restrained by skills shortages	Entrenchment of pro-white labour policies for the Afrikaans populace through job reservation Increased mining mechanisation as a move to contain wage costs and disruptions Agricultural and mining model of low wages and labour exploitation transferred to industrial sector (unsuccessfully) Economy restrained by skills shortages	Employment equity and Black Economic Empowerment (BEE) to address misalignment of the labour market Black unions align with political parties to influence policy. "Decent jobs" as official mantra, with the policy of wage protection over job creation Unemployment rises from 20% in early 1990s to 25% in 2014 Economy restrained by skills shortages
Finding: For well over one hundred years, government labour policy has favoured one racial or cultural group over others. Notable is that under apartheid this practice was exclusionary and indefensible, whereas under the democratic government, it is necessary and morally appropriate; but to a large extent inappropriately implemented and manipulated. As a result, the country has always created elites (often undeserving) at the expense of the broader population, thus excluding full economic participation. Another enduring, and confounding, policy priority, is targeting "high wage – high productivity" under a Porterian model,[13] over a labour-intensive one (Nattrass & Seekings, 2015). This excludes the majority, while the continuous upliftment of skilled workers widens inequality. Skills shortages are, and continue to be, a weakness of the labour market		

Table 4.2: Summary of Findings of South Africa's Political Economy (1910 to 2016) (continued …)

1910–1948 "English-speaking Randlords"	1948–1994 "Afrikaner nationalists"	1994–2016 "Black elites"
Industrialisation		
Mineral wealth recognised as a "wasting asset", necessitating the need to develop a viable secondary sector Government embarks on creating an enabling environment for this through Escom, Iscor, IDC, etc. Industry is supported by import substitution and trade tariffs	Decentralisation, supported by incentives, to create economic activity in rural areas, with limited results, as firms are unable to operate profitably without subsidies Government report recommends a switch from import substitution to export orientation	Being a member of the WTO means trade liberalisation and tariff removal There are some winners, but most companies are unable to compete without trade protection, in a situation exacerbated by Indian and Chinese manufacturing
Finding: South Africa's industrialisation is inextricably linked to the MEC, while non-MEC production is largely uncompetitive, with limited scope for exports. The removal of tariffs demonstrated just how reliant firms had become on them. The small size of the market and selective government support of certain industries has led to an oligopolistic market structure		
Current-account deficit		
Finding: In all three periods, the economy has relied on inward foreign investments to balance its foreign-exchange requirements, creating regular flashpoints and destabilising the economy when investors withdraw large amounts of money on short notice. Mining, and less so agriculture, are the country's bedrock of net foreign exchange inflows. The current-account deficit in 2015 was 5.4% and 4.4% of GDP in 2014 and 2015, and averaged 4.11% of GDP for the period 2005 to 2015.[14] The foreign-exchange inflows fluctuate due to the cyclical nature of commodity prices, but ultimately their contribution is diminishing		

Table 4.2: Summary of Findings of South Africa's Political Economy (1910 to 2016) (continued …)

1910–1948 "English-speaking Randlords"	1948–1994 "Afrikaner nationalists"	1994–2016 "Black elites"
Electricity		
All generation, transmission and distribution brought under state control. MEUs cannot supply users of more than 25 kVA in their area of jurisdiction	Escom starts a massive new build programme. Tariffs rise sharply to fund capital expenditure, and government intervenes after industry protests	White Paper (1998) calls for reform and competition. Programme stalls due to labour protest and lack of government commitment
Finding: Eskom controls the ESI, and its taking control of municipal EDI is not inconceivable, with it having threatened to cut off defaulting municipalities and take over their operations. Its policy, supported by national government, of using residential sales to subsidise commercial and industrial tariffs, aligns with developed country models, which is contrary to developing country practices. In 2011, industry and mines accounted for 77% of sales but generated only 67% of revenue (Thopil & Pouris, 2013)		
Path-dependent mechanisms		
Economy: A young country shifts from an agrarian to a mining economy, to exploit its resources. Inevitably, the *multiplier effect* of the positive feedback loop[15] (self-reinforcing actions) locks (amplifies) economic development to the MEC **ESI:** VFTPC, and then Escom, must generate new and large quantities of power for the mines, pursued through economies of scale. The *multiplier effect* kicks off Escom's long-term modus operandi of continuous build; in a positive feedback loop	**Economy:** Economic growth during the first period emboldens unsustainable policy – positive feedback loop. The economy suffers from international and national pressure. Government responds by attempting to maintain equilibrium – negative feedback loop, i.e., actions to maintain the status quo **ESI:** With continuous build now entrenched in its psyche, it is business as usual for Escom; the utility does whatever is needed to grow its generation capacity – pointing to a positive feedback loop	**Economy:** The economy has changed little since 1994. Globalisation has exposed structural inefficiencies and an uncompetitive environment – evidenced by low growth, high unemployment and inequality. Reform and innovation exist in small measure, with stasis dominating to maintain equilibrium; in a classic illustration of a negative feedback loop **ESI:** Reform avoided through poor implementation and Eskom's and labour's influence. From 2000, incessant political interference has led to decline, inefficiency and corruption – a positive feedback loop

This chapter has demonstrated the extent to which politics, the economy, government, and the ESI (inclusive of EDI) are inextricably linked. And that the complexities are of such magnitude that any attempted changes to EDI in future, which are anything more than superficial, cannot be considered in isolation. Ultimately, it is an

intricate and interlinked situation, and now that we have a clear picture of it and the context it exists in, we can move on to our ultimate focus – municipal ESI.

Notes

1. See Freund (2018).
2. As explained by Dr Thornhill in his interview with the author.
3. Import Substitution Industrialisation (ISI) is a trade and economic policy which advocates replacing foreign imports with products that are produced domestically. ISI is based on the premise that a country should attempt to reduce its foreign dependency through the local production of industrial products.
4. The two smelters consuming as much as 5.5% of Eskom's total generation became controversial when the country suffered blackouts and tariff increases of over 300% in five years, while the smelters continued paying the tariffs agreed to in the 1990s. At the 2014 tariffs, the smelters would be uneconomical. The cost to Eskom was estimated at R11.5 billion in 2014. Although there were initial benefits, the net effect has been a cost to the economy, and it has only been viable through what is effectively a state subsidy (Allix, 2014).
5. A dedicated electrification department was established in the distribution division, with an electrification manager appointed in each of its sections to ensure the achievement of targets (Steyn, 2001, p.112).
6. With the exception of Tygerberg (Cape Town), Sandton, and Midrand (Transvaal), which started out as farms but would go on to become urbanised over time.
7. A mini-distribution board equipped with circuit breakers, earth-leakage protection and plug points.
8. The Act defines "black people" as a generic term for Africans, coloureds and Indians.
9. The country's higher and tertiary education systems continue to produce graduates and graduands of varying employability depending on the institution they attended. Several universities lost their accreditation for a Bachelor of Commerce by industry bodies in the 1990s (Bezuidenhout et al., 2008). In 2017, Bachelor of Laws degrees at 17 universities were reviewed, and four of these institutions were served notice that if standards were not improved, accreditation would be withdrawn (see www.derebus.org.za/withdrawal-accreditation-response-universities/ [accessed 15 February 2021]).
10. The White Paper was heavily influenced by the findings and recommendations of the Electricity Restructuring Interdepartmental Committee (ERIC).

11. In 2013, Eskom applied for a 16% annual average tariff increase for a five-year period, but NERSA capped this at 8%. This figure was revised upwards to 13% in 2015 and 9.4% in 2016 when Eskom requested a review.
12. Solar photovoltaic, solar thermal, concentrated solar, and wind.
13. Professor Michael Porter's Five Forces Model is a framework for analysing a company's competitive environment. It states that a company's profitability is dependent on 1) the number of its competitive rivals; 2) the number of potential new market entrants; 3) the power of its suppliers; 4) its customers; and 5) the threat of substitute-products influence. Since its publication in 1979, it has become one of the most popular and highly regarded business strategy tools.
14. See https://data.worldbank.org/country (accessed 23 April 2021).
15. This approach provides an alternative description of path-dependent mechanisms, through the concepts of self-maintaining and self-reinforcing structures. The theory is drawn from the natural sciences, which it uses to explain how a system moves from an equilibrium to a non-stable state. The most cited example of this is that of temperature change, which has been adopted by political science as the analogy to explain the theory and will be used in the explanation that follows. Before providing a description of each type of loop though, with temperature as the analogy to describe it, it is necessary to list two characteristics identified by Knapp (2007, pp.3–5). The first is that both positive and negative feedback loops may operate simultaneously, particularly when various actors have different interests or resources. The second is that despite similarities or ability to co-exist, their long-term dynamics and responses to change are radically different. A negative feedback loop is described as a self-maintaining or self-correcting mechanism vying for a stable condition (homeostasis). Like a thermostat, whose objective is to maintain a set temperature, it responds to external forces of hot and cold by acting in the opposite way – switching itself on when the temperature drops and off when it rises. Thus, it acts to counterbalance, not reinforce, changes. Customary examples include central banks' standard and universal response to inflationary pressure, the tightening of credit policies, or politicians adjusting future policy changes to align with constituency needs prior to an election. Baumgartner & Jones (2002) point out that negative feedback is always necessary in an equilibrium model and is therefore a part of all neo-institutional analysis. Without it, political interests "would gather ever-increasing powers until they overwhelmed the entire political system". Knapp (2007) illustrates this from the perspective of vested interests, where elites would move to restore equilibrium if their interests were to come under threat. Knapp draws on North's (1990) seminal work to emphasise that self-maintaining structures with common interests may still diverge in development, as actors move to exploit the rules. Thus, the system is able to select non-viable structures, be they inappropriate or past their usefulness – implying that negative feedback supports institutional *survival of the fittest* – a state that rational choice institutionalism, through its functionalist view, seeks to identify and eradicate (Williams, 2012; Knapp, 2007). Turning to positive feedback loops,

we now consider the concept of self-reinforcement. In contrast to counterbalancing, positive feedback is a self-reinforcing process which accentuates or amplifies a trend. Observing this process over time will identify the clustering of events, along with large and unexpected changes. Baumgartner & Jones (2002, p.15) state that "seemingly random initial events can lead to a cascade or a spiral of subsequent events that dramatically change the status quo". Here, the multiplier effect forms the basis of path-dependence theory, as decisions become *locked-in*, making their reversal costly and complex. Examples of positive feedback include economies of scale and increasing returns (Pierson, 2000, p.252). Left unchecked, this leads to an unstable system of cumulative advantages and self-destruction (Williams, 2012; Baumgartner & Jones, 2002). In Pierson's view, political and social structures are far more prone to be characterised by positive feedback – producing path dependence – as compared to economic structures. Reverting to the analogy to illustrate the point, in a state of self-reinforcement, the system would be fitted with a reverse thermostat. Such a thermostat would not submit a signal for the heat source to be switched off in response to an increase in the temperature, but it would do the opposite. It would turn up the heat, increasing the temperature even more, and it would shut off the heat source if the temperature was low. This means that positive feedback loops can amplify historical events, such that small interventions can change events significantly, resulting in multiple outcomes. It is the set point of the thermostat which becomes key, as rooms with identical structures, but different set points (histories), display diverging developmental trajectories (Knapp, 2007, p.4).

CHAPTER 5.

MUNICIPAL ELECTRICITY UNDERTAKINGS AND LOCAL GOVERNMENT

"The relationship between municipalities and Escom had been a love-hate one. Escom loved to have the municipalities' extra capacity on hand in times of crisis, but loathed the way the big municipalities were seen to be taking advantage of the situation." — Conradie & Messerschmidt (2000, p.138)

5.1 INTRODUCTION

The previous chapters explained why MEUs were constantly "under siege" from their political masters (at local, provincial and national level), as well as, to begin with, VFTPC, and then Eskom. This chapter demonstrates how this played out by identifying the political, technical and financial obstructions that these institutions placed in MEUs' way, and the outcomes of this. Here it should be noted that in all of this, MEUs, as operating entities, also had to deal with everyday trading conditions and normal operational necessities – technology changes, economic up- and down-turns, staff competency, and many others. We also consider these in this chapter, using Johannesburg – the country's financial centre and biggest city – as a case study.

Stylistically, the research presented under each of the time periods is anchored around the primary theme affecting the municipal ESI at the time. From 1910 until 1948, it was the relief of rates; from 1948 until 1994, it was Escom's battle for rights of supply; and in the final period (from 1994), it was the challenge of providing electricity for all.

5.2 HISTORICAL BACKDROP – UP TO AND INCLUDING UNION (1910)

With the exception of Johannesburg and Kimberley, numerous attempts to establish municipal government in the interior between 1850 and 1900 failed, largely due to a lack of financial viability (Green, 1957). It was under British control that municipalities were formally established – most of which came into existence in 1903 – across the Transvaal. The town engineer was responsible for all public works under municipal governance. Most of the early engineers were trained via the apprenticeship system (Mäki, 2013).

The Cape Electric Light and Telephone Company was formed in 1879, and the country's first electric lighting appeared in Cape Town's railway station in 1881; this lighting was extended to Table Bay Harbour by 1882. From there, the demand for electricity grew across the country and "by the turn of the century most independent electricity generation plants, for one reason or another, had been taken over by the local municipalities. The result was that municipalities generated most of their electricity … [a] practise which endured for many years" (AMEU, 1995).

5.3 THE UNION OF SOUTH AFRICA (1910–1948)

5.3.1 MUNICIPAL FINANCES AND THE POLICY OF USING MEU REVENUE TO PROVIDE RATE RELIEF

Provincial government controlled municipalities via ordinances, which is why local government functions varied across provinces. The newly formed South African government borrowed greatly from the British structure, and from Union (1910) onwards, municipal financial self-sufficiency was strictly enforced, regardless of the pressure placed on municipalities by, for example, natural population growth and urbanisation. For example, by 1937, Johannesburg had consistently balanced its municipal budget since Union without any contribution from national government (Maud, 1938, p.290). Furthermore, 68 years after Union, on average, national government grants to municipalities made up just 4.7% of municipalities' total revenue (Solomon, 1983, p.58).

The provision of trading services, such as electricity and water, was allocated to local government. The two major revenue sources for municipalities became property rates and the surpluses generated from the charges for these services. Here, the sale of electricity generated

the bulk of surpluses. In the early 1940s, based on gross receipts, fees from trading services accounted for almost 60% of total income, while property taxes contributed 25%, and the remainder (~15%) was from other sources (Cowden & Holmes, 1969, pp.123–124).

There were two categories of services provided by municipalities:

1. Pure public goods, which are non-excludable and non-rivalrous. This means that individuals cannot effectively be excluded from their use of the service, and one individual's usage of it does not reduce its availability to others. Classic examples include street lighting, parks, footpaths and flood control.
2. Quasi-private (or common) goods. These are services that can be charged for based on consumption – units of electricity, litres of water, cubic feet of gas, kilometres travelled, etc. Quasi-private goods have characteristics of both private and public goods.

Figure 5.1 and Table 5.1 show how municipalities started cross-subsidising activities by using positive revenue contributions, such as electricity, against loss-making services, such as transport. The extent to and the speed with which the Johannesburg municipality started using contributions from services to subsidise property taxes, pursuing an indirect over a direct taxation policy, is also evident. By 1935, indirect taxes contributed as much as 77% of the municipality's total revenue. Property ratepayers also benefitted from the city preferring to impose special rates for specific purposes (such as a road levy, and amounts for water mains extensions and for the use of the tram), over increasing property rates. Figure 5.1 may also demonstrate the uncertainty and difficulty associated with property tax collections. Annual increases or decreases of over £100 000 were not uncommon, as can be seen, and this cannot be explained by the policy of keeping rates as low as possible. Electricity and water provided far more reliable revenue sources, where disconnection for non-payment is relatively straightforward (Randall, 1938, p.412).

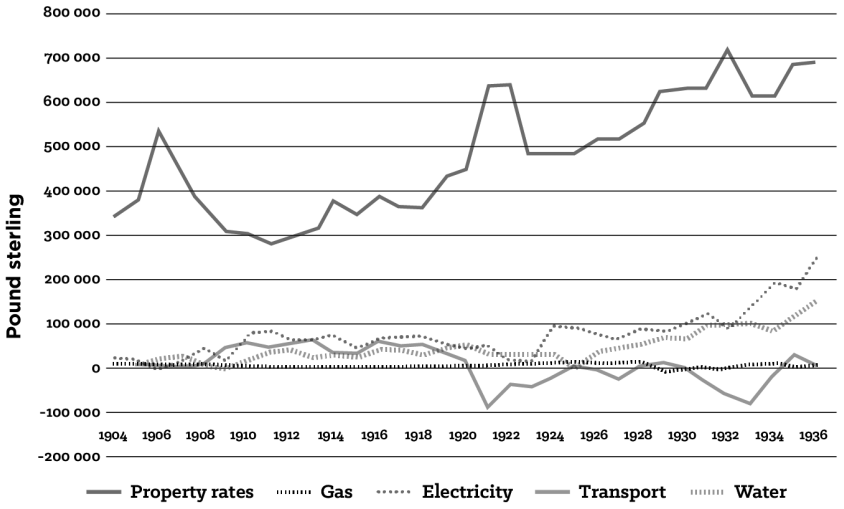


Figure 5.1: Annual Property Tax Collections versus Contributions from Trading Undertakings in Aid of Rates for Johannesburg Municipality (1904 to 1936)

Table 5.1: Contribution of Municipal Undertakings to the Relief of Rates for Johannesburg (1925–1937)

Year ended 30 June	Net contribution by trading departments	Rates	Total revenue	Net contribution by trading departments to rates
	£ (000)	£ (000)	£ (000)	%
1925	91	485	729	18.8
1926	107	512	773	20.9
1927	129	513	829	25.1
1928	161	549	890	29.3
1929	183	627	1 005	29.2
1930	193	632	1 019	30.5
1931	158	633	1 044	25.0
1932	183	713	1 206	25.7
1933	222	616	1 217	36.0
1934	256	613	1 132	41.8
1935	415	690	1 325	60.1
1936	390	693	1 264	56.3
1937	395	706	1 332	55.9

Source: *Randall, 1938, p.411*

Randall (1938, pp.410–411) was very critical of the city's practice, which he claimed was nothing less than a tax, and not a "good one", as it was "inequitable and disguised, but probably recommends itself partly because the bulk of the citizens do not realize that they are being taxed, and therefore do not object". In his paper, Randall goes on to warn against keeping property rates artificially low by maximising the surpluses from the trading undertakings to the greatest extent possible. It was viewed as unsustainable, and it was thought that the policy needed to be reversed. A more equitable distribution, through higher rates, could not be reasonably challenged by rate payers. A 1935 commission of inquiry, which reported on municipal power stations, stated:

> … the profits of the electricity department … allocated in relief of rates, unduly favour the ratepayers at the expense of the consumers. They are unreasonable from the point of view of the users of electricity, and uneconomic from the point of view of industrial and general development of the city. (Maud, 1938, p.114)

Relief of rates was not unique to Johannesburg and was practised by all municipalities. The question that arises is: Why was it pursued to the extent that it was? Certainly, part of the answer is, as Randall notes, that the users of services were exploited. However, there was strong political will to retain this practice, which prevails in present-day 2020. I posit that this was yet another practice inherited from the British system of local government, which aligned with the interests of landowners and which became entrenched even though the British removed it in 1947, because of the autocratic structural governance framework.

In South Africa, the right to vote in national elections was limited to white males,[1] and even greater limitations were placed on who could vote in municipal elections. This right was highly prized, and the failure of a qualified voter to exercise it was viewed as a breach of civil duty; with authorities printing a list of delinquent voters in the local papers. In the Transvaal, Ordinance No. 8 of 1912 (repealed by Ordinance No. 2 of 1914) required a "property qualification" for voters. The report of the 1921 local government commission of inquiry called for this ordinance to be re-established, as "only responsible citizens with a real stake in the municipality should be entrusted the franchise" (Cloete, 1978, pp.119–123). The recommendation was not adopted but illustrates two things:

1. The British system was replicated; and consequently
2. The privilege and power that property owners enjoyed.

The Cape Province kept the municipal voters' roll limited to property owners for a much longer period, until as late as the 1950s.[2] Thus, in addition to surplus revenue from undertakings, users were being charged a tax they were not aware of. This arrangement was also in councillors' interest, as minimising property taxes would ensure the support of the electorate. The practice continued even when the vote was extended to all white citizens, as property owners were likely to carry the greatest influence and provide financial support to political parties.

5.3.2 THE AMEU AND THE POLICY OF USING MEU REVENUE TO PROVIDE RATE RELIEF

Contextual Background

The policy of using municipal undertakings' revenue to provide rate relief did not enjoy universal local government support. Many were against it, not least of which were the electricity undertakings, whose operations were undoubtedly making the biggest contribution to the relief of rates.

The topic was first raised as early as the second AMEU[3] convention in 1917, and came up regularly for discussion thereafter – in 1927, 1929, 1935, and 1936. The issues raised at each convention centred on concerns of what was believed to be the unsound policy of allocating "net surplus profits" from electricity undertakings for the relief of rates. Indeed, by 1937, the AMEU had succeeded in drafting a policy recommendation for the Provincial Administrators to consider, with the objective of inspiring legislation that placed a limit on this practice. In its original form, the recommendation was based on the UK's Electricity Act of 1926, but after a heated debate the proposal was watered down significantly. As it turned out, the recommendation only made it to the Administrator of the Cape Province, and was promptly postponed when the municipality itself objected.

The topic of relief of rates was consuming an inordinate amount of time at annual AMEU conventions in the build-up to the 1937 policy paper, with highly charged discussions having to be ended by the chairman, and always with no mutually agreed outcome. Typically, but not always, the MEU delegates opposed the practice, whereas municipal councillors' interests lay in appeasing their voters, who did

not want to see their property taxes rise. It was therefore decided at the 1936 convention that the AMEU needed to adopt a formal position at its next convention.

The section below provides a summary of the AMEU executive committee's rationale for opposing the practice of relief of rates, followed by responses received from delegates, both for and against the practice.

Summary of the AMEU Paper Presented at the 1937 AMEU Conference Analysing the Policy of Rate Relief and Outlining the Association's Position

The paper, prepared and presented by Councillor James, addressed the topic by breaking it down into themes, under each of which the advantages and disadvantages of the practice are considered. To maintain the integrity of the paper, the below summary maintains the original format and then concludes by detailing the various responses put forward by the delegates.

General Considerations

From a MEU perspective, rate relief is defined as the act of literally using electricity undertakings to relieve ratepayers of the need to pay the full amount necessary to balance the general fund revenue for municipal services, by extracting lump sums from the electricity undertaking. It also includes the provision of public and inter-departmental electrical services at less than cost. Electricity is no longer a luxury only accessible to an affluent few, but has become a necessary requirement for the health and general well-being of a community. Similarly, for industrial activity to provide employment and economic well-being, it is a requirement that electricity supplies are made available to a virtually unlimited extent, at low cost. Alternatives to electricity do exist, but are generally less convenient and have a diminished security of supply. However, charging inflated prices to cover other expenditure raises the likelihood of a loss of business. The objective of the electricity undertaking is to provide the service at the lowest-possible cost, and dividends are received intangibly through the increased valuation of the district served, and not necessarily in cash. Additionally, higher tariffs ignore the needs of the poorer

sections of the community. Indeed, the inordinate temptation of "easy money" from electricity sales has prompted other countries to introduce legislation to control such action; making the AMEU's 1937 attempt to embolden such legislation consistent with global practices.

Equity

It is not equitable for electricity users to unwittingly contribute to total municipal expenses. The greater the usage, the greater the contribution. All ratepayers are not necessarily electricity consumers, but all electricity consumers are ratepayers, either as owners of property or through the rent that they pay. Ratepayers may own large tracts of land using no electricity, whereas a family must pay rates and for electricity. It is thus unsurprising that owners of large rental properties and undeveloped land stand to gain the most from, and are the most ardent supporters of, the policy. A figure of 14.5% is quoted as a real-case example of the contribution towards the relief of rates. In other words, the price of electricity is 14.5% more expensive than it should be, in order to pay for other municipal enterprises.

Financial Security

Municipal reliance on revenue from electricity undertakings has become so convenient that in certain instances the amount taken exceeds gross profit, resulting in a deficit being carried forward. This practice will undoubtedly put future development of the undertaking at risk; in extreme cases, it will risk the undertaking itself. This has been due either to councillors not understanding the consequences or councillors having so little regard for the undertakings. The relief of rates is only possible when there is a surplus, which is a true one – after allowance has been made for external charges, such as redemption (repayment of an investment or a debt on or before its maturity date), interest on loans, and most importantly, depreciation and obsolescence of plant and equipment, which are often overlooked or subject to variation on personal opinion. It is the way that these three items are treated that makes such sizable amounts available for the relief of rates.

Electricity undertakings operate in a rapidly changing environment, where improved technology is constantly introduced. This could lead to equipment having to be replaced during its working life, and undertakings must be financially prepared to do so. The transfer of money for rate relief rather than being put back into the business, leads to the situation where undertakings must secure loans to finance new equipment and operations, adding interest costs and further necessitating tariff increases. This practice is akin to raising loans indirectly for the relief of rates, the legality of which is questionable. Here, additional minor arguments for ratepayer relief include that on account of ratepayers effectively standing as guarantors, loans are secured at a lower rate. This too is refuted by the AMEU executive on the basis that it is in the ratepayers' interest and that financial institutions are already very willing to loan funds to electricity undertakings.

Rewards to Ratepayers

The relief of rates practice is supported by the argument that ratepayers are entitled to a return on their investment, as they ultimately stand as guarantors. The argument is rejected on the basis that the ratepayers are only liable for interest on the capital invested in the undertaking, which of course, benefits the district and in turn their investment. But even if it is accepted that the ratepayers as investors are entitled to a reward, it can be argued that their reward consists of them becoming owners of an asset for which they have not paid anything. This takes the form of the increased valuation of their properties due to the prosperity which the supply of electricity has brought. The advantage to ratepayers is maximised by supplying electricity at the lowest-possible price and operating the undertakings in a prudent financial manner, rather than reducing monthly rate payments.

Legislation

The problem of rate relief is not unique to South Africa. In England, legislation in 1926 was introduced to place a limit on this practice. In New York, a proposal to aid rates from municipally owned electricity undertakings was rejected outright on the basis that it is the private sector's purpose to obtain profit. Public undertakings are created and operated for the well-being of the

population, and although it is a requirement that undertakings are properly managed, consumers must not pay a higher tariff to benefit ratepayers.

Turning to South Africa, the Electricity Act of 1922 requires Escom to regulate its charges at its various undertakings to operate at neither a profit nor at a loss. Other licensees (notably VFTPC) are required to distribute 25% of their surplus profits to their consumers.

Although no legislation exists for municipal undertakings, a draft ordinance was published in the *Cape Provincial Gazette* on 19 May 1936.[4] It allowed for a portion of net surplus revenue from electricity undertakings to be used for the relief of rates, but limited it to 1/20th of the total capital expenditure of the undertaking (the same level as stipulated in the Electricity Act of Great Britain of 1926). Furthermore, if transfers are deemed excessive in the opinion of the Provincial Administrator, the Administrator can direct that no further contributions be made for a specified period thereafter without written consent.

Conclusion

Relying on profits from undertakings for the relief of rates is a doubtful practice, as it is an unreliable form of taxation because profits vary from year to year. An overreliance on this revenue source is likely to create municipal funding problems if electricity sales or profits drop. Additionally, using electricity profits to fund unprofitable or risky municipal enterprises discourages the enterprise itself from maximising profits. Electricity undertakings should be run on business principles, and the provision of services to the municipality itself should be at market rates and without subsidy. This principle should apply to all municipal services undertakings.

Delegate Responses to the Official AMEU Position on the Policy of Rate Relief

Table 5.2 captures the essence of what were lengthy, polite, but pointed responses, in favour of and against the practice. Two things can be surmised from the responses:

1. The delegates had strong views on the subject, creating conflict; and

2. A glance at the responses, both from this conference and others (before and after), confirms that, typically, MEU delegates (technical) supported the removal of the practice, and councillors (political) opposed its removal.

Table 5.2: Summary of Responses to the AMEU Executive Committee on the Policy of Rate Relief at the 1937 Conference

Municipality/ Delegate	Comment
Support the removal of rate relief from MEU funds	
East London	Practice equates to an indirect tax As electricity undertakings are natural monopolies, they are exploiting their position Concern that technological advances may more readily result in the replacement of electricity if it is too expensive Electricity profits used for rate relief must be limited to a small percentage, with consumers enjoying lower tariffs
Johannesburg	The views of the Town Council (politicians) do not coincide with that of their financial advisers and engineers Ratepayers should receive relief subject to a limit, which should be "somewhat higher" than the caps applied in other countries. Reserves for obsolescence should be maintained Before appropriations are made, consideration should be given to the reasonableness of electricity tariffs
Pretoria*	Does not encourage prudent accounting, such as provision for depreciation and obsolescence Artificially high electricity tariffs harm a city's competitiveness Experience from England shows that the practice was abused and necessitated legislation Many councils have terminated the policy from other undertakings (gas, water). Why is it done for electricity? The Electricity Act effectively nationalised the industry, is an admission that it is a public utility needed in modern life and therefore must be provided at lowest cost
Cape Town	Failure to match loan periods to the useful life of equipment is effectively raising loans for the relief of rates. Proper and prudent accounting is crucial
Port Elizabeth	Larger electricity consumers do not benefit from the relief of rates

** The delegate from Pretoria stated the arguments from both camps, but personally believed that the surplus contributed to rate relief should be limited to 2% of the outstanding debt of the undertaking per annum.*

Table 5.2: Summary of Responses to the AMEU Executive Committee on the Policy of Rate Relief at the 1937 Conference (continued …)

Municipality/ Delegate	Comment
Support the policy of rate relief from MEU funds	
Bloemfontein	Escom's efforts to curb MEU profits have become an obsession Municipalities are trading concerns which are required to provide functions and services. Some of these are unprofitable by their nature, but as they are vital and necessary, they are provided. By not using the funds available from profitable undertakings, the city is forced to raise loans or increase its taxes. Either way, the consumer is in the same position, as a cheaper electricity tariff is offset by a higher tax rate. It is a vicious circle and what is given with the one hand is taken away by the other
Pretoria	Ratepayers stand as guarantors for the undertakings and rightly deserve a return Services lose money, break-even or make money; but they must be provided, necessitating a "swing-and-roundabouts" approach If profits may not be used, ratepayers will refuse to pay higher rates for services that are operating at a loss Sales are increasing, suggesting that rates are not too high and do not hamper industrial progress Electricity is no longer a luxury and thus can be taxed. This reduces direct taxes, such as income tax Municipal undertakings do not pay taxes, yet use available infrastructure (roads, buildings, etc.). Relief of rates is a way of contributing
Stellenbosch	The issues cited do not apply to municipalities supplied by Escom. These towns also have limited prospects to attract industry, thus profits from electricity allow rates to be kept at a level which encourages new buildings, which expands the revenue base
Durban	It is municipal policy to maximise profits on electricity sales and use the proceeds for rate relief Preventing this practice will only result in councillors finding another way to tax the electricity undertakings Even though it is an indirect tax, it is very thinly disguised and must be exploited to the fullest

Table 5.2: Summary of Responses to the AMEU Executive Committee on the Policy of Rate Relief at the 1937 Conference (continued …)

Municipality/ Delegate	Comment
Neutral	
Escom	Councillors and engineers should not be pitted against each other, as both should be working to achieve the same objective – the progression of the city and not their individual departments Possibly too simplistic to state that what the one hand gives, the other takes away Municipalities distribute surpluses to subsidise rates; only to take loans when there are shortfalls. Reserve accounts should be kept; these could be used to finance capital projects and called upon when needed The impact on small, medium and large consumers must be considered Undertakings must charge their municipalities on a cost or cost-plus percentage basis for own consumption

Source: *AMEU, 1937, pp.77–106*

After robust and lengthy debate, consensus could still not be reached, and the discussion was abandoned. A sub-committee would be formed to investigate, and would present its findings at the 1938 conference.

How the Debate Ended

Little changed in 1938 and 1939, and all discussions were postponed indefinitely due to the outbreak of WWII (AMEU, 1939).

For the 1945 convention, the AMEU president proposed that national government be approached directly. The real issue was the relationship between central and local government. Over the years, municipalities had been required to undertake additional functions, which they did not believe was their responsibility and for which they received no additional income. Being so hard-pressed for money, the municipal treasury was often forced to act in the way that it did. The situation deteriorated to the extent that the Institute of Municipal Treasurers and Accountants was preparing a report that was to be submitted to the Minister of Finance. Consequently, a meeting was held with the four Provincial Administrators, and an overhaul of the municipal system was the expected outcome. The councillors' proposal was adopted (AMEU, 1945).

The 1946 AMEU convention concluded that the practice would not be reversed and decided to change their approach to one of "damage limitation", where the relief of rates was done in a financially

responsible manner, which would not put the electricity undertakings at financial risk. This message was to be communicated to the United Municipal Executive (UME) (AMEU, 1946). Any hope of changes to local government functions and the financing thereof ended when the ruling party lost the national elections in 1948 and the NP came into power.

Tracing and providing an accurate account of these events demonstrates how the now path-dependent self-reinforcing practice of relief of rates rapidly entrenched itself, whose benefits, a hidden tax, were of such magnitude that opting out or transforming became increasingly unlikely. Furthermore, an accurate account of the concerns raised by those who opposed it allows for an evaluation of what has come to pass. In other words, it becomes possible to determine how prophetic these assertions were some 80 years later, through a counterfactual analysis.

5.3.3 MEUs: DEVELOPMENT AND OPERATIONS UP TO 1948

This section details how municipalities first started generating and distributing electricity, demonstrating how the MEUs developed utilities in their own right.

The first attempts at the bulk supply of electricity in Johannesburg were nothing short of disastrous. A concession, for electricity and gas supply, with land, was granted to a private company in 1888. The company went bankrupt before any generating equipment had arrived, and it was acquired by the Johannesburg Lighting Company in 1891. This company did not fare much better. The council expanded its own generation, but this too failed and the project was shut down in 1907. The municipality then entered into an agreement with VFTPC for the supply of 1 700 kW, but failed to enter into long-term supply agreements. Finally, the municipality built a new generation plant of 13 MW (in 1911) and announced that it was "practically equal to all demands made upon it"[5] (Maud, 1938, pp.111–114).

By 1923, more generation was needed, and the municipality approved plans for a new £550 000 power station. By then, however, the Electricity Act of 1922 was in force which required that applications for all new power stations, or extensions, be submitted to the Provincial Administrator. The Administrator was compelled to ask the newly created Escom to sanction or oppose the application, but was not obliged to follow Escom's recommendation. Escom did not support

Johannesburg's application, and proposed three alternative power supplies for the city.

The Johannesburg Electricity Undertaking (JEU) outmanoeuvred Escom by making piecemeal extensions, each one small enough to not require the Administrator's approval (MM, 1936). The turning point came when VFTPC was not able to adequately meet the needs of the mining industry, and a reciprocal supply agreement was concluded, where the JEU would supply VFTPC during the day (when the mines needed the most power) and vice versa in the evening, when the JEU's demand peaked. The Administrator, against the wishes of Escom, approved Johannesburg's application for a new power station in January 1928 (Maud, 1938, pp.116–118). Johannesburg's insistence on own supply centred on three issues:

1. Continuity of service;
2. Financial considerations; and
3. Local industries and consequent value to its ratepayers.

The first issue concerned the high incidence of power outages from the long-distance overhead transmission from Witbank. The consulting engineers also calculated that it would be of greater financial benefit to the city if it generated its own electricity. By this time, the city had become accustomed to, and reliant on, the profits generated from its electricity trading – the returns from 1912 to 1924 were 120%. Finally, the city wanted the annual money spent on wages and stores to be kept in the local economy (Sankey & Clark, 1925).

The new Jeppe Power Station, construction of which began in 1927, used a 10 MW turbo generator; it extended its capacity three years later with two more 10 MW generators. Plans for an additional plant were only approved by the Administrator with the reciprocal supply agreement between VFTPC and JEU. A major overhaul of the Jeppe Power Station facility was undertaken between 1935 and 1939, resulting in a total generation capacity of 114 MW. In 1939, the JEU was granted permission to build the 300 MW Orlando Power Station in Soweto. Delayed by WWII, it only came into operation in 1945 (Fraser, 2008).

The reciprocal supply agreement was mutually beneficial, as Johannesburg's electricity was entirely integrated into the greater Witwatersrand system, allowing the two supply companies to assist each other during shortages. This is the most likely reason that Escom did not object to Johannesburg's application to build the Orlando and

the Kelvin A (1957) and Kelvin B (1962) Power Stations soon thereafter, as at the time, Escom was struggling with shortages (Conradie & Messerschmidt, 2000, p.137). This co-operation agreement, as we will see, ended as soon as Escom stabilised its supply. By 1959, Johannesburg had 570 MW of generating capacity and sales of 1 350 GWh (Christie, 1984, p.162).

5.4 THE APARTHEID ERA (1948–1994)

This section of the chapter consists of three distinct parts. The AMEU minutes from the early 1950s provide a record of the development of the municipal ESI under apartheid. Indeed, during this long period of NP rule, there were three dominant themes relevant to this research, which the municipal ESI was grappling with. Accordingly, the research is structured to reflect this. The first period (1955 to 1969) deals with rights of supply. The second period (1971 to 1988) covers the municipal ESI's era of distribution. The final period of just seven years (1988–1994), considers the industry's response to and preparation for the democratic national elections. The final section then undertakes a detailed examination of Johannesburg's municipal finances and electricity surpluses.

5.4.1 MEUs: DEVELOPMENT AND OPERATIONS

By the 1950s, the AMEU was meeting biannually. These gatherings were attended by municipal electrical engineers from all the major cities and towns that generated electricity and/or had an electricity undertaking. Smaller towns increasingly opted to outsource their electricity requirements to Escom as the utility's new generation plants came into service. The larger municipal undertakings, especially JEU, operated fully integrated utilities, and did not see themselves as electricity distributors.

Period 1: Rights of Supply (1955–1969)

30 November 1955: It was reported that the ECB[6] had agreed to give municipalities the right to supply electricity to areas outside their area of jurisdiction, subject to certain conditions. Johannesburg did not accept the ECB conditions and formed a sub-committee to address the issues with the ECB.[7] Pretoria had a policy of charging higher tariffs in rural areas and the ECB required them to provide justification as to how the tariffs were derived. Cape Town charged rural users the city tariff plus 20%. The ECB wanted all undertakings to apply a standard

formula for rural users; the AMEU's rural-tariffs sub-committee submitted a proposal but received no response.

The AMEU clarified the definition of "undertakings" in November 1956 as: "A local authority carrying on an electricity supply undertaking". "Supply" included generation and distribution.

In 1957, the ECB notified all municipal undertakings that henceforth any supply to an industrial customer greater than the 150 kW allowable limit needed to be approved by the Ministry of Economic Affairs – representation and the submission of an application for each connection would be required. The AMEU rejected this outright and would request a meeting with the minister.

April 1958: The ECB responded that the proposed conditions would be modified, but provided no further detail. Attempts to meet with the minister yielded no results. The ECB referred the AMEU to the provincial secretary, who did not reply. A sub-committee was formed to discuss the matter with Escom directly, in the hope that the matter could be resolved amicably.

The feedback at the November 1958 meeting was that Escom had been contacted, but no response had been received and it was unlikely that one was forthcoming. The AMEU decided to report the matter to the Institute of Municipal Treasurers and Accountants, which represented their interests at the Borckenhagen Commission meetings.

May 1959: The theft of copper had become an epidemic, and a request was to be made to national government to review laws. Municipalities opting to take their bulk supply from Escom stated that their finances were adversely affected by Escom's practice of increasing tariffs at very short notice, as this additional cost had to be absorbed until the next scheduled annual tariff increase. It was proposed that Escom increases be passed on to consumers immediately.

October 1959: The participants heard that the Borckenhagen committee had postponed their meeting. The ECB had not finalised the revised conditions but agreed to provide temporary permission to municipalities to extend reticulation to rural areas.

May 1960: The AMEU had received the revised conditions for supply to rural areas from the ECB and raised the requirement of a uniform tariff as an issue. Rural tariffs had to be divorced entirely from municipal area tariffs, as they could not be brought in line with municipal tariffs due to different cost structures and voter pressure groups. Additionally, it was patently unfair to expect a local authority to invest in a distribution network only to allow Escom to decide to supply any users whose load exceeded 150 kW. It was confirmed

that the meeting with the Borckenhagen committee was set for 30 November 1960.

April 1961: The AMEU committee accepted the ECB conditions, which maintained the 150 kW supply limit, to supply customers outside their area of jurisdiction, but did not accept this as an internal restrictive condition.

November 1961: The sub-committee findings were that Escom and the undertakings were essentially competitors when it came to supplying industrial customers within a municipal area of jurisdiction.

May 1963: It was agreed that a committee, which would collaborate with the Institute of Municipal Treasurers and Accountants, would submit a memorandum to the fifth Borckenhagen Commission.

November 1964: The committee agreed to support the UME proposal that the Electricity Act of 1958 be amended to compel users situated within the municipal area of jurisdiction to take supply, if available, from the municipal undertaking. The Ministry of Commerce and Industry communicated that it would not support this proposal.

October 1965: With Orlando Power Station, JEU's upgraded peaking plant (a plant that generally only runs when there is a high demand), and Kelvin A and B Power Stations all operational, Johannesburg started planning for the future. MM were appointed to evaluate the available options, and delivered a series of reports. The first report, revised with updated figures (MM, 1966), focused on two strategies, which they called Basis A and Basis B. In terms of Basis A, it recommended that the city avoid or delay the construction of a new plant by taking supply from Escom. Basis B considered zoned supply, where Escom would take complete responsibility for supplying a zone of the city, with additional zones added as required. Basis A and B were evaluated against a simultaneous study on the economic viability of the JEU building a new plant (MM, 1965). The study, using a growth rate of 7.5%, estimated that maximum demand would grow from the 594 MW recorded in 1965, to 1 420 MW (5 700 million kWh) in 1978. Estimating future output and the extent of derating of existing power stations, and determining acceptable standby requirements, it was calculated that if the JEU opted to build a new power station, it should be sized at 1 000 MW. The conclusions of the study were that a zoned supply (Basis B) was the least financially advantageous option and would also introduce transmission and distribution difficulties. A bulk supply from Escom would provide a financial benefit to the city until 1974, the expected completion date of the new plant, and a net saving could be expected by 1978 which would stabilise at approximately R1.75 million per year in 1980. The report considered the future supply

and price of coal, transport costs, and bulk-tariff costs before recommending that the city build a new generation plant at Liefde-en-Vrede. It would need to be started by June 1966 for the unit to be in service in March 1971. City management accepted the recommendation and submitted an application for a new power plant to the Provincial Administrator (JEU, 1966).

A delegation met with the minister on 23 August 1967, but it was only granted one hour, and only three items were addressed:

1. A proposed amendment to the Electricity Act, providing as a matter of right the opportunity for a municipality submitting an application for a generation licence to respond to any comments or objections made by Escom. The minister agreed to this but Escom came forward requesting that they too have the right to respond to the reply.
2. Local authorities be represented at Escom and the ECB. The minister's view was that this was unlikely to be approved, as it would set a precedent for other ESI participants to claim the same right.
3. A request for the ECB to report to the Provincial Administrators rather than Escom. Under the existing arrangement, it was difficult for the municipalities to conclude anything other than that Escom representatives protected their own interests in their reports – acting as consultants, competitors and as an interested party, all at the same time.

Mr R. Leishman, general manager of the JEU, demonstrated that Johannesburg could generate electricity at a cheaper rate than the bulk tariff that Escom charged the city and that the municipality would be using sewage water for as much as 80% of the power plant requirements, whereas Escom used fresh water only – a 1956 study concluded that water would be a limiting factor to the country's economic development (MacKay et al., 2003). The city further requested that, should municipal borders be extended, electricity supply become an automatic right, subject to the outcome of a negotiation with Escom.

The minister would only make two promises:

1. To give local authorities the opportunity to reply to points made by Escom in its reports to the Administrator; and
2. That local authorities retain the right to generate electricity, but only if they could show that they could do it cheaper than Escom could.

The minister undertook to put these two points in writing and respond fully to the memorandum that UME submitted, but he did not follow through with this (Giles, 1968).

At the May 1968 AMEU meeting, Mr Leishman stated that the minister's failure to respond was causing serious delays to its application for a new generation licence. It was agreed that a "reminder" letter be sent to the minister and Provincial Administrator. Mr Leishman also advised the AMEU committee that the city had decided to institute legal proceedings and would approach the Supreme Court to approve its application.

November 1968: Shortly after the release of the Borckenhagen Commission report, the minister responded,[8] stating that he would adopt the Commission's pronouncement that "the country's requirements of electricity should be undertaken by Escom". In reaching its conclusion, the Commission stated that no evidence had been received from local authorities. Leishman disputed this, stating that the Commission had not requested any evidence on municipal electricity generation. It was resolved that the UME be requested to arrange a follow-up meeting with the minister, with the requirement that he be properly briefed and that it not be limited to a short session.

June 1969: Reporting on the outcome of a meeting held in Margate[9] (which came to be known as the Margate Convention) between all affected parties to resolve the rights-of-supply issue, the AMEU had agreed to accept the minister's proposal of "probably the best solution to the problem". Municipalities henceforth accepted that Escom would become the de facto bulk supplier and generator of electricity, leaving distribution to municipalities. In return for the loss of revenue, municipal distribution borders would be extended, subject to an agreement reached between Escom and each municipality. The Margate Convention was the event where local authorities relinquished their right to generate electricity.

In the 1969 *Annual Report of the City Manager: Electricity Department, Johannesburg* (JEU, 1969, pp.1–4), Leishman confirmed that the Provincial Administrator, following the directive of the minister, had turned down Johannesburg's application for a new 1 000 MW power station for the third time, on 14 April 1969. The city explained that it never contended that it could generate more cheaply than Escom, but that the bulk-supply rate offered by Escom was higher than the cost of self-generation. The city attempted to get an assurance from Escom that tariffs would not increase by more than a third over a period of 15 years (coal costs excluded), but Escom would not agree to this. Even though the lawyers felt that there was a high chance of

the Administrator's decision being set aside, it was decided to take bulk supply from Escom, as demand was growing and the plant could not be built before demand would exceed supply. Leishman took early retirement the following year. Having fought so hard for so long, the loss was crushing, and he lost his will to continue.[10]

Period 2: A New Business Model – Era of Distribution (1971–1988)

MEUs had to adjust to their diminished role of distribution and accept that they were now price-takers with limited bargaining power. They reduced their generation activities to nursing their existing power plants to eke out every kilowatt of power. In the next two decades, the relationship between Escom and municipalities was characterised by less acrimony and greater co-operation, but mutual tension was ever near.

September 1972: Escom agreed to support the AMEU application to the ECB to remove the 150 kW supply limit to industrial users. During the period 1973 to 1977, there was much discussion and debate about the interpretation of how Escom-owned distribution infrastructure should be valued, based on the recommendation of the second Borckenhagen report. The AMEU felt that they were represented in an unsatisfactory manner by the UME and decided to approach Escom directly. This yielded better results, but unexpectedly and contrary to the commitment made in 1972, Escom reversed their decision to remove the municipal 150 kW supply limit to industrial users. A furious AMEU submitted a new application to the ECB to have this condition removed. In response to complaints about frequent tariff increases with no notice period, Escom stated that it was not able to provide a six-month notice period.

November 1977: Escom notified municipalities that they could expect load-shedding to take place.

October 1981: Escom requested that the notice period for tariff increases be reduced from three months to one month. This was rejected by the AMEU, who stated that three months' notice was the absolute minimum.

In 1973/74, JEU had entered into a bulk-supply agreement with Escom when its plants were no longer able to meet demand. Later that decade, the JEU commissioned MM to undertake two reports. The first evaluated how the city's power-supply system (MM, 1979) could be best used to maximise profits from its existing plants; and shield its users from excessive Escom tariff increases, Escom changes to the tariff structures, and frequent outages. The report analysed usage patterns,

forecast future consumption for planning purposes, and discussed how to maximise the Orlando and Kelvin plants. The study reported that maximum demand would increase from that recorded in 1978, 1 066 MW, to 3 189 MW in 2000; this could be reduced to 2 839 MW through energy-efficiency measures (load control and higher tariffs). The second report (MM, 1981) investigated the viability of new generation opportunities, including unconventional options. The study concluded that it was not economically feasible to build a replacement power plant at Orlando. Peaking plants were found to be uneconomic and to have too many technical barriers. Likewise, pumped storage opportunities (a type of hydro-electric energy storage used by electric power systems for load balancing) were too small, and the alternative technologies they investigated were not viable. The best option, the report concluded, was for the JEU to invest in extending the life of their existing fleet for the longest period possible.

August 1984: The AMEU made representation at the De Villiers Commission. The advisability of a standard tariff for users would be considered, and AMEU representatives would attend national workshops on township electrification.

September 1986: Escom agreed (relented) to fixed annual increases on 1 January 1987.

November 1987: Eskom approached the AMEU to market electricity jointly. Support and training would be provided at branch level, with an undertaking that future strategies be worked on jointly, to which the AMEU agreed.

February 1988: Eskom provided an assurance to the AMEU that a maximum demand charge would not be levied on MEUs that still generated electricity.

Period 3: *Quo Vadis?* – Preparing for a Democratic Government (1988–1994)

> The statement that the distribution industry has not been "capable" of supplying electricity to those who need it is incorrect and objectionable. The distribution industry was not allowed to do so by Government policy. (AMEU Response to Department of Mineral and Energy Affairs Report on the Development of the EDI, November, 1992 [AMEU, 1992])

By 1988, Eskom had transferred most distribution areas to municipalities, but these were taken back when the utility began supplying townships and rural areas with electricity (Marquard, 2006). Both Eskom and MEUs were operating in a highly charged and uncertain economic, political and structural environment. P.W. Botha's privatisation plans, strongly supported by the minister, meant the entire ESI was nervous.

The 1989 AMEU conference in Cape Town was themed "*Quo Vadis?*" ("Where are you going?"), and was part of a broader strategy to define the Association's objectives, mission and function, in response to the above challenges. A discussion following the opening address saw the Eskom representative (Botes, 1989) state that it was inevitable that the ESI would be rationalised. The AMEU's response was immediate. An extraordinary meeting on "Rationalising the ESI" was held one month later on 10 November 1989 (AMEU, 1989). AMEU members were incensed:

> … municipal electricity undertakings have been running well and ESKOM was looking to off-load non-paying black areas …
>
> … how would ESKOM supply electricity to black areas, as they neither have the manpower [n]or [the] resources to do this efficiently[?] …
>
> … combined venture as proposed by ESKOM … would mean that industry will subsidise black areas …

With delegates having vented their frustrations, the discussions changed tone and members confirmed their commitment to electricity for all, requesting a meeting with Eskom for an official clarification of their interpretation of rationalisation of the ESI. Less than three months later, with the government now under F.W. de Klerk, it was announced that Eskom was not considered as a suitable candidate for privatisation (Conradie & Messerschmidt, 2000, p.263).

Eskom was given a reprieve, but the future of municipalities remained uncertain. In October 1990, the Thornhill Report was released, and it became evident that things were changing, and MEUs were about to encounter major structural changes.

From 1990 until the 1994 elections, the regionalisation of EDI dominated discussions. During this charged and uncertain period, the stakes were high. Consultation extended beyond the traditional industry participants of government, AMEU, ECB and Eskom. The AMEU had to position itself in the ongoing NELF discussions, which had multiple and diverse stakeholders,[11] who the AMEU was not accustomed to or familiar with. The AMEU had to reach consensus amongst its constituents, which was not straightforward, as members had different political affiliations. Ultimately, the AMEU accepted that regionalisation[12] of some form was necessary, and it communicated this externally.

January 1991: Eskom's introduction of Time of Use (ToU) to large customers led to a shift in usage and a loss of revenues for municipalities (see Figure 5.6 on page 152), which was to be recovered from households. The AMEU lobbied Eskom (unsuccessfully) for the

ToU tariff to be based on a daily, and not a monthly maximum. At a meeting, it raised concerns that Eskom had applied to provincial government to start distributing electricity to urban African residential areas, with the view of taking control of this market. Essentially, Eskom was planning to compete with municipalities, which was contrary to the Margate Convention. Municipalities were encouraged to take steps to protect their client base.

June 1992: The AMEU and Eskom met to discuss tariffs:

1. They resolved to agree on the extent to which Eskom would be allowed to influence municipal tariffs;
2. Municipalities would support standardised tariffs, if Eskom would do the same;
3. The development of regions around nuclei was acceptable, on condition that in time these regions would come under government control;
4. There was a need to apply ToU tariffs to household electricity usage; and
5. National inclining block tariffs would be introduced.

September 1992: The AMEU attended the inaugural NELF workshop,[13] where electrification and the restructuring of the EDI were debated. The AMEU recognised the need for both but noted that vested interests were likely to resist change and that local authorities were best placed to undertake distribution. The AMEU once again put forward its views, held from the 1930s, that surpluses be shown as a visible tax.

The section that follows casts focus on municipal finances and the practice of relief of rates using MEU revenue during the current period under discussion.

5.4.2 MUNICIPAL FINANCES AND THE POLICY OF USING MEU REVENUE TO PROVIDE RATE RELIEF

With the NP in charge, and the same funding challenges, the UME (in 1953) once again approached national government for the appointment of a commission of inquiry into municipal finances and how financial relief could be provided. Indeed, the issues raised and the proposals put forward differed little from those of 1944 (Jenvey, 1964, p.149).

Government finally yielded, and in August 1956, the Committee of Inquiry into the Financial Relations Between the Central Government,

Provinces and Local Authorities (whose report understandably came to be known simply as the Borckenhagen Report) was appointed by the minister. The terms of reference asked the committee to investigate and report on, among other things:

- The existing functions of local authorities, whether these were justified, and the extent to which functions should be abolished, diminished or transferred;
- The sources of income of local authorities, and the adequacy of the income sources to perform these functions (Borckenhagen, 1964).

The Borckenhagen inquiry took 15 years to finalise and yielded little from a local government perspective. This was succinctly summed up by the 1970 mayor of Johannesburg, Patrick Lewis (1987): "Little help could be expected from its recommendations, as it based its figures on outdated 1962 statistics." The committee proposed that health be redirected to provincial or national government, which would materially reduce the financial burden on local authorities, and on that basis it was concluded that municipalities did not require new sources of income. Moreover, the committee sided with Escom – stating unequivocally that distribution should reside with local authorities, but industrial users should be afforded the protection of Escom rates. This entrenched Escom's right to directly supply energy-intensive users and drove the final nail into the coffin for municipal electricity generation (Marquard, 2006; Jenvey, 1964; Borckenhagen, 1964; Craythorne, 1982; Browne, 1983). The practice of rate relief from electricity surpluses was officially sanctioned by national government in the 1971 White Paper (Ministry of Finance, 1971).

Not surprisingly, municipal finances did not improve, and municipalities continued to lobby government, proposing alternative and additional models. The minister of finance finally yielded, and in 1976, the Committee of Inquiry into the Finances of Local Authorities under G.W.G. Browne (1980) was convened. As had been the case with the Borckenhagen Report, the Browne Commission's recommendations offered little to municipalities. The report did not identify any new revenue sources; in fact, it implied the opposite and proposed that municipalities were inherently inefficient and should put their affairs in order. This finding was expressed forcefully (Browne, 1980) and backed up by the report seeking to reduce existing revenue sources, recommending that the surpluses from all trading services be restricted to 10% for five years, and thereafter to a maximum of 5%. Craythorne (1982) provided a scathing analysis of the committee's

work, finding fault with its limited understanding of local government and stating that the committee clearly pushed through national government directives:

> The startling display of ignorance could have been avoided … It might have been hoped that having got off to a bad start the report might have improved but unfortunately this was not the case … It is difficult to escape the conclusion that this was deliberately done to avoid dealing with the need for subsidies to local government.

The Browne Report was followed by yet another inquiry – the Croeser Working Group on Local Government Finances, which endorsed and promoted the policy of RSCs. The Regional Services Act of 1985 introduced a levy on business payrolls and turnovers (Government of the Republic of South Africa, 1985).

Ultimately, national government failed to resolve the issues facing local government. In truth, its actions made matters worse, and it was seemingly fixated on identifying weaknesses in local government.

5.4.3 JOHANNESBURG'S MUNICIPAL FINANCES AND ELECTRICITY SURPLUS

When looking at Johannesburg as a particular focal point for this period, one immediately notes that electricity consumption grew in line with the city's population growth and geographical expansion. Figure 5.2 illustrates the growth in electricity usage for the period 1952 to 1995. The JEU sold 928 534 029 units in 1952 and 6 229 159 044 in 1995 – an average growth rate of 4.9% (Figure 5.3). Figure 5.2 shows both macro and micro trends. For example, 1953 and 1954 reflect the post-war boom years, while the period up to 1976 reflects the positive economic conditions punctuated by small recessionary periods. The impact of the Soweto Riots is clearly visible (1977–1979), followed by the short-lived gold run of the early 1980s. From thereon there is modest growth due to high tariff increases and of course the political and economic environment.

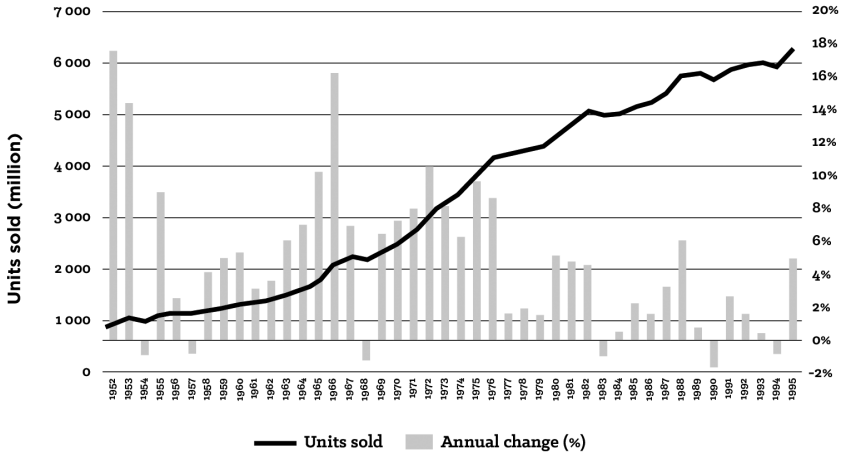


Figure 5.2: Johannesburg Electricity Undertaking Annual Sales (1952 to 1995)

Source: *JEU,* Annual Reports of the City Manager, Electricity Department

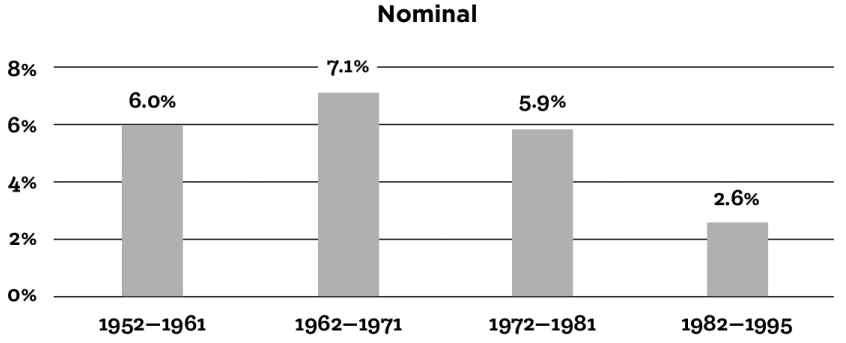


Figure 5.3: Average Percentage Growth in Electricity Sales for Johannesburg (1952 to 1995)

Source: *JEU,* Annual Reports of the City Manager, Electricity Department

Figure 5.4 is interesting for many reasons, as it shows how electricity surpluses became a reliable and indispensable source of revenue. It shows clearly the relationship between a tariff increase and an increased surplus in the following year. Notable examples include 1959, 1972, and from 1985 onwards. Infrequent but larger nominal tariff increases up to the late 1970s were replaced with smaller annual tariff increases to begin with, becoming more significant in the late 1980s.

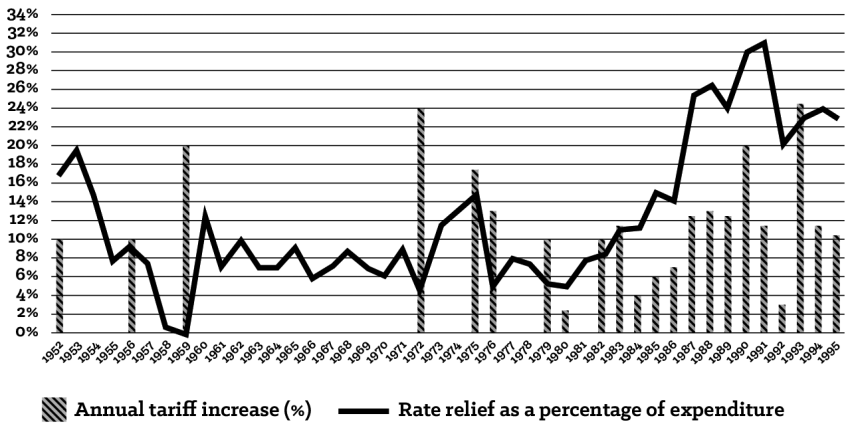


Figure 5.4: Annual Contributions Towards Rate Relief and Tariff Increases for Johannesburg (1952 to 1995)

Source: *JEU,* Annual Reports of the City Manager, Electricity Department

Figure 5.5 now illustrates the annual contributions the electricity department made to the relief of rates for the period 1952 to 1994. Two things stand out. The first is the extent to which contributions increased from the early- to mid-1980s. During this period, Escom was in an over-supply situation and offered the city bulk-supply discounts. Escom recognised that once it became the JEU's primary supplier, it would find a way to remove the discounts; the JEU accepted Escom's offer, but kept the Orlando Power Station operational as an alternative supply.

> We knew that if we shut down Orlando, the game was over and Escom would revert to the original tariffs, so we kept two boilers operational. This worked well, and we were even able to increase the discounts, until 1990. The electricity undertaking made large surpluses during this period. (Martin Pomeroy, city electrical engineer)[14]

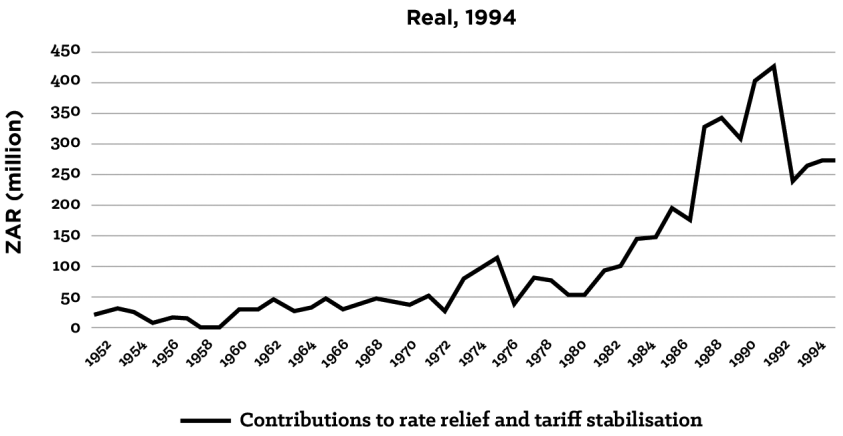


Figure 5.5: Annual Contributions Towards Rate Relief from Electricity Surpluses for Johannesburg (1952 to 1994)

The second standout observation is the profound effect on the electricity surplus that occurred in 1992, when the city reduced residential tariffs and limited the increase on business tariffs. The surplus dropped in real terms (using 1994 as the base year) from R449 million to R234 million. The loss in revenue from electricity in 1991 was offset by a corresponding 68% increase in revenue from property rates (Johannesburg Municipality, 1992, p.vi) (Figure 5.6).[15] The inevitable question thus arises: Given the prevailing operational environment, why did the city take the drastic and risky decision to reduce electricity tariffs? The answer is the evolution of Sandton – "a nouveau riche exemplar of peripheral urbanization" – and Murray (2011, p.114) explains that this was not by design:

> In 1967, at the height of apartheid, the National Party carved out two new municipalities, Sandton and Randburg,[16] in what at the time was the peri-urban periphery of Johannesburg … this decision to create a separate local government at Sandton was primarily motivated by the mounting fear of losing citywide elections to the white political opposition, which had its strongest base of support in the northern suburbs … In order to secure their own tax base, Sandton municipal authorities set out, with some animus, to compete against the Johannesburg central city for corporate clients by offering considerably lower property taxes rates, and relaxed zoning applications favourable to the expansion of commercial and retail development.

Not only did Sandton benefit from lower property rates and relaxed zoning requirements, but it also enjoyed significantly lower electricity rates than what the city was charging, as it received its supply directly from Eskom. The

effect was that Johannesburg came under pressure from its anchor tenants. The city argued that it offered far superior infrastructure, all of which came at a cost. However, this was insufficient: "there was a backlash from energy dependent consumers and particularly those who were close to the borders of Johannesburg where their competitive counterparts enjoyed the Eskom demand tariffs some 40 to 50% less than Johannesburg's". To start, the exodus was not wholesale. Companies retained their offices in Johannesburg, but opened new offices and made expansions in Sandton and Randburg. Once the new offices were established, the entire company followed.[17] Democracy saw the demarcation of new municipal and provincial boundaries; Johannesburg absorbed the Sandton and Randburg municipalities as well as several townships, most notably Soweto and Alexandra, to form a Metropolitan Local Council (MLC). A peculiarity of this new arrangement was that Eskom continued to distribute to Sandton and Soweto, while rates had to be equalised across the city – prompting the Sandton rates boycott in 1996.

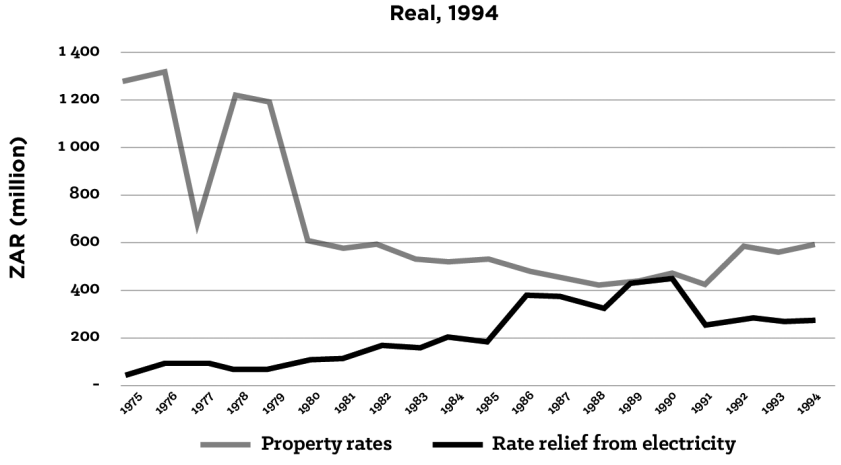


Figure 5.6: Annual Contributions from Property Rates and Electricity Surpluses for Johannesburg (1975 to 1994)

Note: *The sharp drop in property rates revenue in 1977 was not explained in the annual financial statements, but doubled (in nominal terms) the following year.*

In painting a strong numerical picture of municipal funding reliance on limited sources during this period, Figure 5.7 demonstrates the extent to which electricity sales and property rates make up the bulk of municipal revenue. Indeed, a closer analysis (Table 5.3) reveals that municipal functions were:

1. Operated at a marginal profit, or at a loss (water and sewerage); and
2. Heavily subsidised (transport and health) or completely subsidised (culture and roads) by property rates and electricity surpluses.

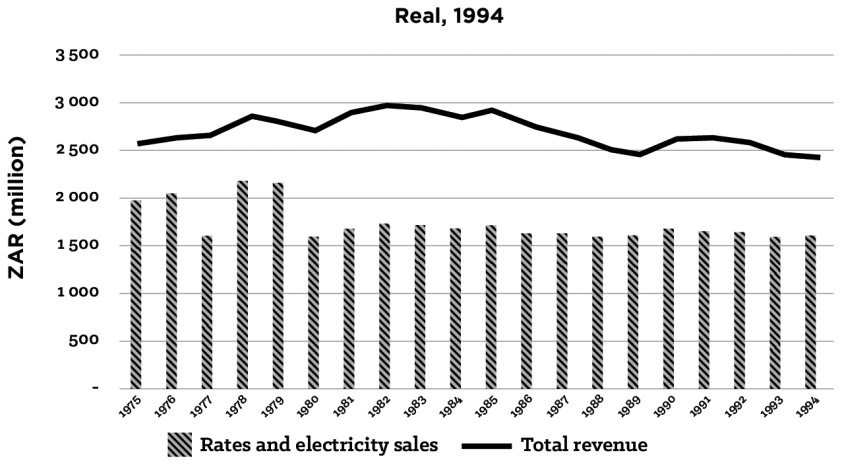
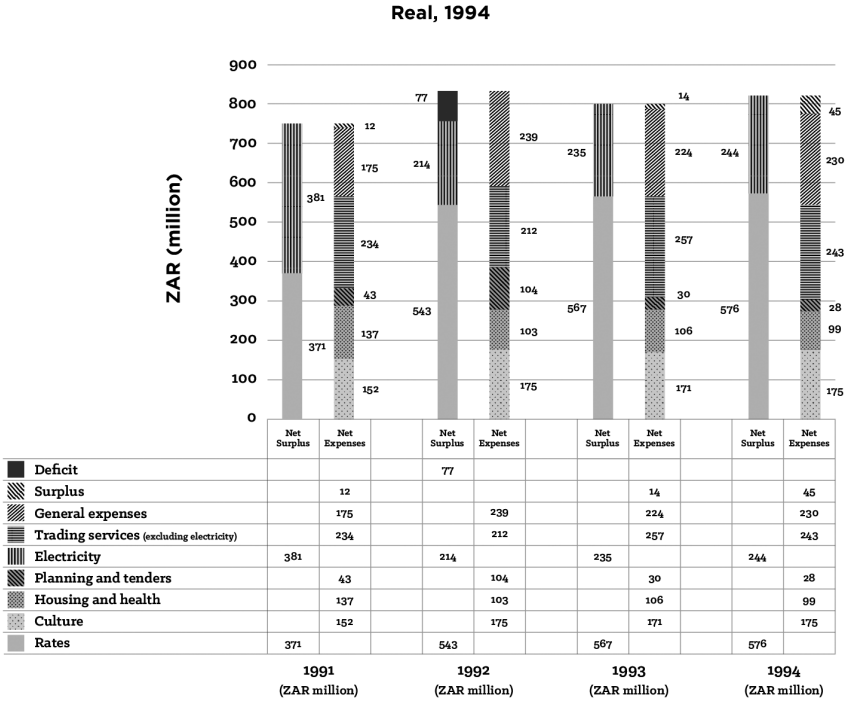


Figure 5.7: Contribution of Property Rates and Electricity Sales to Total Revenue for Johannesburg (1975 to 1994)

Table 5.3: Surplus/Deficit for Selected Municipal Functions for Johannesburg (1991 to 1994)

Service	Surplus/Deficit in ZAR (millions) – Real, 1994			
	1991	1992	1993	1994
	Marginally subsidised: Up to 20%			
Water	17	-4	-2	-1
Sewerage	23	17	8	6
Gas	5	-1	0	4
	Heavily subsidised: 20% to 60%			
Health and housing	-137	-103		
Transport	-47	-42	-38	-36
	Completely subsidised: >60%			
Culture	-152	-175	-171	-175
Health and housing			-105	-99
Roads	-153	-172	-152	-129

Figure 5.8 shows the city's exclusive reliance on rates and electricity to provide functions for the period 1991 to 1994.



	1991 Net Surplus	1991 Net Expenses	1992 Net Surplus	1992 Net Expenses	1993 Net Surplus	1993 Net Expenses	1994 Net Surplus	1994 Net Expenses
Deficit			77					
Surplus		12				14		45
General expenses		175		239		224		230
Trading services (excluding electricity)		234		212		257		243
Electricity	381		214		235		244	
Planning and tenders		43		104		30		28
Housing and health		137		103		106		99
Culture		152		175		171		175
Rates	371		543		567		576	

Figure 5.8: Aggregated Income and Expenditure Statement for Johannesburg (1991 to 1994)

More than anything, the long period under NP rule again demonstrated an escalating intransigence in shifting away from the practice of relief of rates on the part of municipalities – particularly given that the electricity-generation battle had been lost to Eskom – with the growing reliance on revenue from electricity distribution being made worse by national government's ongoing dithering in critically addressing the challenges of municipal funding – which itself was overtaken by socio-political events in the latter part of the period, as the nation inexorably began to move towards democracy.

5.5 DEMOCRATIC ELECTIONS AND ELECTRICITY FOR ALL (1994–2017)

5.5.1 SETTING THE SCENE

The immediate post-apartheid period was dominated by two pressing but contentious issues:

1. The urgent need for Eskom and municipalities to meet the targets and commitments made towards national electrification; and
2. The restructuring of the ESI.

5.5.2 NEP AND THE NEW REGULATOR

Having served its purpose and in danger of compromising agreed outcomes due to the theoretical debates on the form of a future ESI, NELF was disbanded in 1995 (Conradie & Messerschmidt, 2000, p.314). NELF's work was consolidated into a final report which highlighted the state of crisis that the ESI was in, most notably the distribution sector which needed urgent restructuring. Over 400 municipalities distributed electricity, and Eskom serviced a further 2.5 million consumers, ranging from high-intensity users (mines and smelters) down to indigent households. As many as 120 municipalities serviced fewer than 1 000 households, and more than 90 had annual revenues of less than R1 million. The result was a fractured industry with too many tariffs, vastly disparate charges and varying service levels. Users in Gauteng paid between 9 and 17 cents per kWh, whereas equivalent users in Mpumalanga (where most of the power stations were located) paid 23 to 32 cents per kWh. Surpluses from electricity sales were as inconsistent – 50% of the total was generated by the top four municipalities; the next 25% was generated by 18 municipalities; with the final quarter being divvied up amongst the remaining 380-plus local authorities, almost all of which were operating at a loss.

The report recommended the establishment of an electricity regulator, who would replace the ECB, have wide-ranging powers, and be charged with overseeing the restructuring of the ESI. The first phase of this overhaul would see Eskom absorb the small and non-performing MEUs. The second phase would see the establishment of a limited, and more feasible, number (5 to 17) of REDs. Consolidating the EDI would achieve the long-held objective of cost-reflective tariffs, end cross-subsidisation (relief of rates), and ultimately deliver a competitive

ESI (Conradie & Messerschmidt, 2000; Bekker & Marquard, 2008; Galen, 1997).

However, NELF's reform recommendations directly challenged the vested interests of Eskom and municipalities, and "the controversial recommendations ground to a halt" (Conradie & Messerschmidt, 2000, p.320). The National Energy Regulator (NER) was however established on 4 October 1995, with ex-Eskom CEO McRae appointed as its first chief executive, and many key positions being filled by ex-Eskom personnel. All exemptions to regulations were removed from the Electricity Regulation Act, as henceforth Eskom and all MEUs would report to the newly created NER. With so many Eskom people at NER, there was little question as to where sympathies lay, an issue which became a source of contention for the AMEU.

A first order of business for NER was the establishment of the Electricity Working Group (EWG), which was tasked with making recommendations on the future structure of the EDI. All stakeholders were involved (there were 24 workshops in total), and the EWG undertook a thorough analysis of the industry. Many of the affected parties (Eskom, AMEU, the Institute of Municipal Treasurers and Accountants) undertook their own reviews.

Unsurprisingly, Eskom and the AMEU clashed (again) when the latter discovered that Eskom generation was charging Eskom's own distributors a lower tariff, through its Wholesale Electricity Tariff (WET). The government then set up the Electricity Restructuring Interdepartmental Committee (ERIC) to review the findings of the EWG. The stakeholder consultations that the NELF, EWG and ERIC processes had undertaken readily identified the issues (Galen, 1997, p.1):

1. The EDI was fragmented, inefficient and needed to be rationalised and prioritised;
2. Tariffs needed to become cost-based. To do so, cross-subsidies would need to end or be marginal. Electrification could be funded through tariffs but had to be done in a transparent manner; and
3. The ESI needed to separate generation, transmission and distribution, to create a competitive operating environment.

The differing political ideologies and vested interests of the various stakeholders made finding mutually acceptable action difficult. For example, the urgent need to reform and consolidate EDI was universal,

but how was it to be done? Some favoured creating a national electricity distributor, whereas others believed that a small number of regional distributors, the so-called REDs, would be more efficient and more responsive to local concerns and interests. The boundaries[18] of REDs required careful consideration of ownership, asset valuation, regulation, and human resources. The ERIC report and its recommendations were submitted to Cabinet. In May 1997, after numerous revisions to address comments and concerns, Cabinet approved the consolidation of the EDI into the maximum number of financially viable and independent REDs (Eberhard, 2007b; Conradie & Messerschmidt, 2000; Galen, 1997).

However, not all tiers of government agreed. At its inaugural meeting, SALGA[19] immediately rejected the establishment of REDs, as this was viewed as a constitutional matter. Electricity and gas distribution, amongst others, were municipal functions protected by the Constitution. SALGA's position did not deter national government, which in 1998 issued the White Paper on Energy Policy, which detailed its intention to reform the ESI.

Due to a variety of factors, it was decided to move the second phase of the electrification programme from Eskom to the DME. An evaluation of the programme for the period 1994 to 1999 found that it had cost R8 billion, and had increased electrification from 36% to 66% nationally through three million new connections, primarily in cities and towns (Borchers et al., 2001, p.iv).

5.5.3 REDs (SO CLOSE, YET SO FAR), ISMO AND ADAM (MUCH OF THE SAME)

The Need to Reform the EDI, and the REDs Programme

By 2005, there were 278 municipalities, and the more-than 400 electricity distributors had merged into approximately 180 units, which were still too many (DME, 2002; Mlambo-Ngcuka, 2004). Having abandoned plans to privatise generation, government remained committed to reforming the EDI, as the issues identified in the mid-1990s persisted.

Section 156 (1) and (2) of the 1996 Constitution assigns and lists the functions municipalities have exclusive authority over; electricity reticulation is one of these. In 2002, the DME stated that, in their opinion, EDI restructuring could still occur without a constitutional change. The basis on which such a conclusion was based remains unclear but suggests that national government believed that a political

solution was probable. This approach compromised the programme from the outset, as municipalities negotiated knowing their participation was voluntary and thus from a position of strength (Eberhard, 2007a & 2005b; Pickering, 2010; Gaunt, 2008).

In 2000, national government appointed PricewaterhouseCoopers (PwC) to develop a mutually beneficial and acceptable model for all stakeholders and which addressed the contentious issues of boundaries, ownership, asset valuation, regulation, and human resources. The report, meant to serve as a blueprint, was compiled by the EDI Restructuring Committee (EDIRC) (DME, 2001) and proposed six REDs, each anchored by a metro to provide financial sustainability (Figure 5.9), supported by 57 recommendations to achieve the end objective. The blueprint was approved by Cabinet in 2001, and EDI Holdings, a state-owned entity, was formed in 2003 to resolve outstanding issues and manage the process. In early 2005, President Mbeki confidently set June 2005 as the target date for the establishment of the first RED (RED1), a pilot project jointly approved by Eskom and the Cape Town metropolitan government. The target was achieved, but on paper only. The stumbling block was Eskom, who having previously supported the programme, was unwilling to operate under the rules and provisions of the local government system,[20] which were different to those applicable to state-owned entities. On this basis, Eskom resisted (refused) transferring its assets, customers and staff to RED1 control. To appease Eskom, the REDs were categorised as non-municipal entities, but unsurprisingly, this arrangement then became unacceptable to the city of Cape Town, who stated that the nature and structure of the arrangement had fundamentally changed to its detriment, and it promptly pulled out and asked NERSA to revoke the RED1 distribution licence and re-establish the status quo. All agreements were cancelled and RED1 was dissolved.

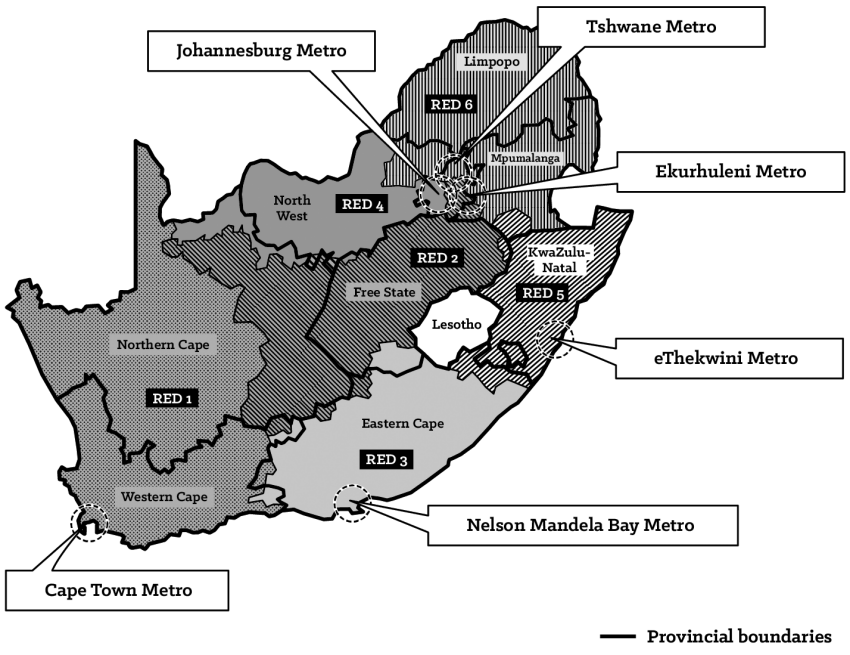


Figure 5.9: Six Wall-to-Wall REDs

Source: *Eberhard (2013b)*

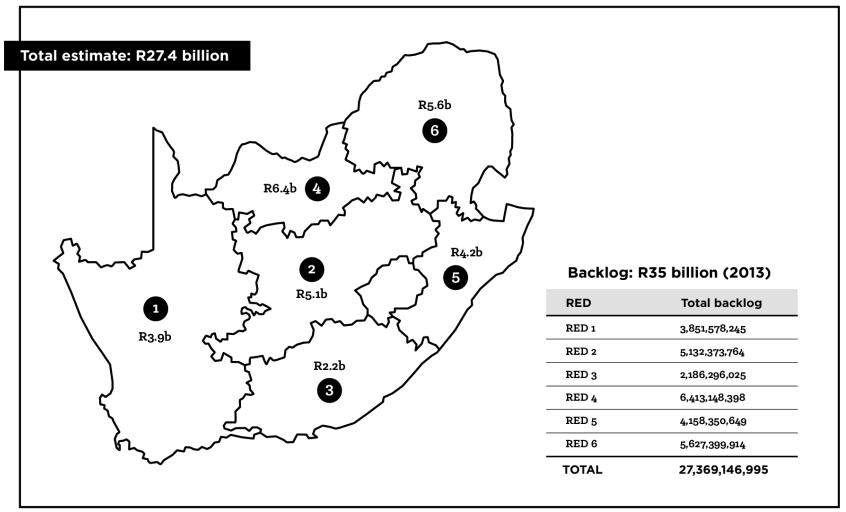
In 2006, the DME instructed EDI Holdings to make REDs work. In June 2008, EDI Holdings CEO Phindile Nzimande expressed that she believed they were getting close: "Never before has the environment for the establishment of the REDs looked so substantially promising". From 2006, over R1.2 billion was spent on reviving the REDs, but with little progress. Government finally threw in the towel and the REDs scheme was officially abandoned and EDI Holdings wound-up following a Cabinet decision made on 8 December 2010.

Reforming the EDI, which had developed, and been entrenched for, over a century, was never going to be straightforward. The failure of REDs, however, came down to three main issues:

1. How would ownership of the REDs be determined?
2. How would local government and Eskom be compensated for their assets?
3. Who would control the REDs?

The attempt to reform the EDI took 15 years, cost several billion rand

and yielded little. The real victims however were the physical municipal distribution systems. During this extended period of uncertainty, the owners of each distribution system, in being told that their assets would be transferred into a new structure for an unknown sum or for nothing – as many feared – adopted a policy of minimum maintenance. Not only were non-essential capital investments put on hold, but preventative and common infrastructure suffered the same fate. Indeed, it was not uncommon to wait for equipment to fail before action was taken. The backlog of infrastructure maintenance was R27.4 billion in 2008, and by 2013 estimated at R35 billion (Figure 5.10) and growing at approximately R2.5 billion per annum, which the minister of energy (formerly the minister of minerals and energy) and NERSA continually kept referring to as a ticking time bomb (McDonald, 2009; Eberhard, 2000, 2005a, 2005b, 2007a & 2013b; Pickering, 2010; Kessides et al., 2007; Gaunt, 2008; DME, 2001 & 2002; Mlambo-Ngcuka, 2004; Savage, 2008; Nzimande, 2008; Yelland, 2010).



RED	Total backlog
RED 1	3,851,578,245
RED 2	5,132,373,764
RED 3	2,186,296,025
RED 4	6,413,148,398
RED 5	4,158,350,649
RED 6	5,627,399,914
TOTAL	27,369,146,995

Figure 5.10: Estimated Refurbishment and Maintenance Backlog of the EDI in 2008

Source: *Eberhard (2013b)*

Approach to Distribution Asset Management (ADAM)

With the REDs scheme abandoned, EDI Holdings was absorbed in April 2011 by the DoE, which inherited the issues the REDs project was set up to resolve. In November 2012, Cabinet approved the DoE's ADAM programme, which would work with municipalities to address the high

backlogs of maintenance and refurbishment of their distribution networks, but due to the enormity of the task, a phased approach would be adopted. NT re-allocated R320 million of the funds not utilised by EDI Holdings to DoE to initiate Phase 1, or the "Mini-ADAM", which would target nine MEUs (seven local municipalities and two metros). Updating Parliament on the progress of Mini-ADAM in November 2013, the SALGA representative explained that the majority of the selected MEUs had neither the financial nor the human resources to identify and develop high-level electricity master plans to normalise their networks.

The sheer lack of progress since 2011 is astounding. Knowing from 2008 that the capital-investment backlog was growing at R2.5 billion per annum and of national urgency, the DoE took the better part of four years to complete Mini-ADAM, spending a paltry R320 million. During this period, the backlog ballooned to R80 billion by 2017, and the DoE was still only referring to Mini-ADAM and considering innovative finance mechanisms.

Integrated System Market Operator (ISMO)

Eskom, as a vertically integrated utility which generates, transmits and distributes, has managed and controlled South Africa's electricity system since it took control of the VFTPC, and the function it serves as a systems operator is not independent (Pickering, 2010). The publication of the ISMO Bill on 13 May 2011 would introduce competition by creating a level playing field for all ESI participants. A new state-owned entity, which would take over necessary Eskom assets, would buy electricity from generators to sell to customers, showing them prices from which they could choose. The Bill came under a significant amount of criticism for focusing too closely on encouraging investment in generation to overcome power outages, without adequately addressing fundamental issues.

The Bill never made it to Parliament; Minister of Energy Ben Martins subsequently admitted to blocking it. Market commentators speculated that Eskom influenced this action and finally succeeded in killing the Bill. This hypothesis is both plausible and probable. Citing the fragile status of Eskom, government officially withdrew the ISMO Bill to allow Eskom the time and space to stabilise its power plants.

> The ISMO Bill in its current format is off the table. There will be a new bill that will be developed that is fit for the current situation and not create any instability within the electricity supply … (Dr Wolsey Barnard: acting director general, DoE, 17 February 2015)

No pronouncements on a new Bill had been made by the DoE by the end of 2017.

5.5.4 DEMOCRACY AND THE EVOLUTION OF THE AMEU (1994–2012)

Unless stated otherwise, this section is a summary of AMEU meeting and conference minutes and internal documents, providing an internal view of the MEUs' response to national government's attempt to implement REDs, and it focuses on the recommendations made by PwC.

***Note:** Where a month and a year are given followed by a colon, (e.g., '**July 2001:**') this denotes an AMEU meeting. External meetings are noted as such.*

In June 2000, PwC released the eagerly awaited ESI restructuring report.[21] Mr Howard Whitehead, an honorary member of the AMEU who was also on SALGA's ESI technical working group, presented a paper titled *Restructuring of the Electricity Distribution Industry* at the 2000 AMEU proceedings. He noted that significant progress had been made to narrow the gaps that existed between the preferred approaches of Eskom and SALGA, but that "the ultimate decisions lie in the hands of the politicians both at national and local level or sphere". His paper articulated SALGA's position by explaining each of the 15 (of the 58) recommendations that the Association found to be contentious. The most pertinent are summarised, followed by SALGA's response (for the full list and a detailed explanation, refer to Whitehead [2000]):

- **Recommendation 6:** National government would hold a "golden share" in each of the REDs. Local government was questioning this recommendation, as it gave national government certain rights, most notably that REDs could not sell shares (to whoever would be interested in buying them) without national government approval. SALGA did not object to the principle of a golden share, but to how this authority would be exercised. Given that local government is mandated by the Constitution to reticulate electricity, it would follow that the golden share reside with them.
- **Recommendation 19:** Retail competition needed to be introduced as a priority. SALGA did not object to competition, but MEUs would need time to adjust to the new operating environment.
- **Recommendation 30:** Tariffs to low-income households would need to be below the cost-reflective rate. SALGA's view was that although necessary, this was a welfare issue and needed a political solution and to be dealt with via a national policy

focusing on the indigent. The purpose of the restructuring was to reduce and even eliminate cross-subsidisation.

- **Recommendation 56:** Licences, agreements and other legal instruments necessary for the establishment of the REDs should be drafted under the co-ordination of the transitional structure. SALGA's view was that a single service-delivery agreement for all municipalities within the REDs would be unworkable, as each municipality's needs would be different and the result would be that the large municipalities would dominate.

July 2001: SALGA, under increasing pressure to protect the financial interests of its members, wrote to the minister of energy to suspend the programme until the financial-impact study had been completed. Municipalities were also calling for greater transparency from Eskom and wanted the utility to charge its distribution areas the same transmission tariff as it did municipalities.

February 2002: The update from the technical committee noted:

1. Eskom had still not signed the voluntary co-operation agreements with the MEUs and would not do so until its conditions were met;
2. The DME believed that restructuring could still occur without a constitutional amendment;
3. SALGA was against moving electricity distribution from Schedule 4B to 4A of the Constitution, as this had the potential to degrade the security basis for bank loans;
4. SALGA's financial-impact study estimated that municipalities would need to be compensated by R4.3 billion for the loss of income resulting from the restructuring of the EDI, and would need a further R2.2 billion to ring-fence their departments;
5. Municipalities would need to retain the right to levy a surcharge on electricity distribution; and
6. On the basis of the PwC model, municipalities would become the minority shareholders in all REDs.

In light of the above, the AMEU resolved to advise its members that in preparing for REDs, all MEUs needed to "corporatise" and ring-fence their operations.

April 2003: The technical committee confirmed that Eskom had restructured its divisions to match the proposed REDs boundaries.

March 2004: The introduction of the Municipal Financial Management Act (MFMA) removed many of the perceived advantages of the EDI, and the EDI Bill had not shown any signs of progress.

October 2006: As a result of the failure to launch RED1 in Cape Town, the AMEU reconsidered its position, as follows:

1. REDs would need to be municipal or public entities;
2. The Association confirmed its support for the six-REDs model;
3. A firm legislative framework was needed to ensure an orderly and equitable transition;
4. All stakeholders would need to tacitly acknowledge that reticulation and distribution meant the same thing, and to confirm their acceptance of a 132 kV supply cut-off;[22]
5. All REDs would have to be regulated by NERSA; and
6. All customers would need to be included in the REDs scheme, and Eskom could not supply customers privately or separately.

October 2008: The AMEU discussed at length an announcement by government that it had decided to change the Constitution to allow for REDs.

October 2010: EDI Holdings advised the AMEU that energy security had overtaken EDI restructuring as a national priority, and that the latter was not expected to be resolved before 2017.[23] Dr de Beer however encouraged municipalities to continue consolidating their MEUs' operations based on long-term concession agreements.

At the 2011 AMEU conference on the EDI restructuring programme, Dr de Beer delivered a frank post-mortem presentation in which he lamented the lost opportunity (De Beer & Waters, 2011) . The state of the distribution network, bar a few pockets of excellence, had been neglected, and the longer this continued, the more expensive it would be and the greater the economic and political consequences would be. It was the smaller municipalities, the very ones that EDI restructuring was supposed to benefit, who had received the short end of the stick. The need for a constitutional amendment was undoubtedly the elephant in the room, however there were other issues which led to the failure of REDs:

- **Political will:** The DoE always publicly stated its commitment to the process, but contradicted this by reducing the funding allocations to a level which made meaningful progress unattainable;
- **Legislation:** The required enabling legislation, which could have been leveraged from national policy objectives, was not created;
- **Enforcement:** NERSA had repeatedly failed to hold municipalities to account. However, in the view of McDonald (2009, p.50), the biggest failure was to perpetuate and entrench the apartheid practice of a pricing scheme that subsidised industry and the middle class, while charging low-income households higher absolute tariffs. This resulted in reduced consumption, or the use of alternative, often more dangerous forms of energy.

5.5.5 NON-PAYMENT OF MUNICIPAL SERVICES, AND FUNDING SHORTFALLS

The phenomenon of non-payment of municipal services has a long history dating back to the 1980s, having successfully been used as an effective protest tool against an illegitimate minority government. This practice continued after the 1994 elections, however, and by all accounts has become endemic and of serious concern.

Ascertaining the reasons for continued non-payment has thus spurred significant research from all sectors – government, NGOs and academia (see McDonald, 2002; Mavhungu, 2011; Peters, 2012; Fjeldstad, 2004; Ringane, 2013; NT, 2001 & 2011). Non-payment happens due to a combination of factors and cannot be reduced to a single issue, as some argue. These factors include:

- Unwillingness to pay;
- Inability to pay;
- Entitlement;
- Inability of municipalities to collect (no metering system, broken meters, no billing system);
- Dissatisfaction with the service or associated services;
- An ingrained culture of non-payment ("Others don't pay, so I won't …"); and

- A lack of trust in local government to use the funds received effectively – together with non-payment remaining an indirect form of protest against national government, as the electorate is unable or unwilling to vote for any other political party, and therefore voices its dissent through non-participation.

Regardless of the reasons, the effect of non-payment for services on municipal finances is devastating and greatly impedes municipalities' ability to deliver on their constitutional mandate of developmental local government. For the period 1994 to 2003, municipalities accumulated a total of R24.3 billion in consumer debt due to non-payment (Fjeldstad, 2004). This grew to R108 billion in 2016, 66% of which was owed by households (NT, 2016b). In a presentation to Parliament in August 2016, the CEO of Eskom reported that municipalities owed the utility R6 billion, which excluded R1.4 billion written off in 2004, and stressed the need to recover these funds. In early 2016, and again in 2017, Eskom went as far as threatening to disconnect the top-20 defaulting municipalities, who in early 2016 owed R3.68 billion (Whittles, n.d.).

Statistics South Africa (Stats SA) (Figure 5.11) found that 30% of municipal income was derived from electricity sales (in 2013) and that "the financial viability of many municipalities could be tenuous if they were no longer able to trade economic services, such as electricity". The amount owed to Eskom by Soweto, which it supplies directly, and which is not included in the municipal debt, was R4.74 billion for the year ended 2016 (Eskom, 2016, p.41).

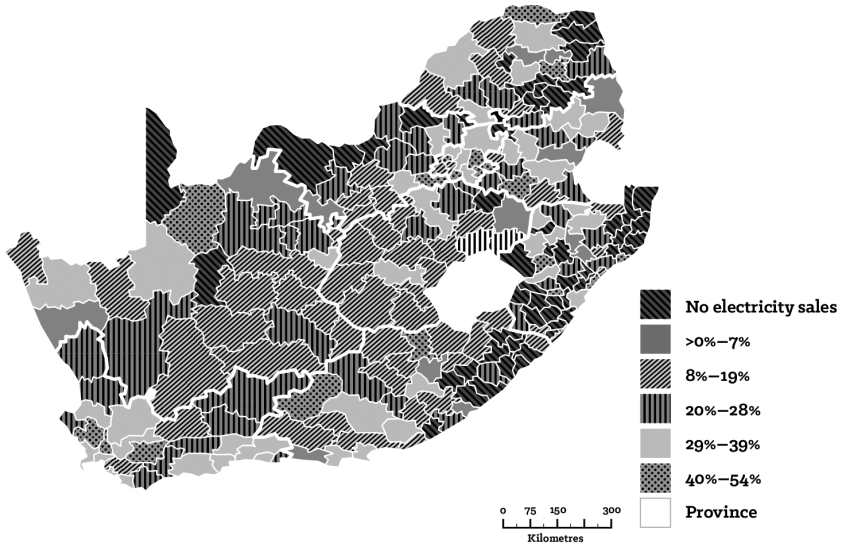


Figure 5.11: Percentage of Overall Municipal Income Earned from Sales of Electricity (2013)

Source: *Stats SA (2016)*

Ultimately, municipal funding shortfalls must be covered in some way. The most expedient method is to divert funds, such as bulk-purchase payments to Eskom (PMG, 2016), but this practice only buys time and eventually the shortfall must be sourced. Municipalities thus turn to the two sources available to them. The first is gained by increasing property taxes and service tariffs on the existing resident base. This is problematic, though, as it penalises compliant residents who will thus resent it. Moreover, the added financial pressure on residents may lead to a greater percentage of non-payment. The second source is gained through national government transfers. This however immediately goes against the core principles of decentralisation. Decentralised government, the Constitution acknowledges, can only be achieved if local governments are largely financially self-sufficient, which is why the specific revenue-generating functions they perform and their "equitable" share of nationally collected revenue (skewed towards rural municipalities) are both protected by the Constitution.

By 2015, government grants were the largest contributor to municipal revenue, at 31%, followed by electricity sales, at 28.3%, and property rates, at 14.7% (Stats SA, 2016).

5.6 CASE STUDY: JEU

5.6.1 ALIGNING TO A NEW POLITICAL STRUCTURE AND EXTENDED SERVICE AREA (1995–2001)

In 1994, Johannesburg comprised 13 separate municipalities. These were divided along racial lines, and within this, ethnic or cultural lines.[24] The municipalities had differing capacities and in many instances overlapping functions and powers. After the 1995 local government elections, a two-tier system was introduced, whereby the municipalities were merged into four independent geographical sub-structures called Metropolitan Local Councils (MLCs), which were overseen by the Greater Johannesburg Metropolitan Council (GJMC). The consolidation proved more difficult than expected. Although each MLC and the GJMC had its own tax base and budget, it was treated as one.

Previously unserved black townships, populated almost entirely with low-income households, were now incorporated and could only be serviced by redirecting cross-subsidisation. Payments during this period fell throughout the city (Table 5.4) and dropped as low as 81% in 1997. The city's 1998 financial statements reported that outstanding debt had increased to R2.9 billion, of which it was felt only R1.3 billion was recoverable. Reduced revenues did not deter the ANC-led municipality from continuing to focus on delivery. Budgets were expenditure-driven, with little thought as to how they would be funded[25] – all coming together to create a perfect storm (Lodge, 2003; Barchiesi, 2011; Amen et al., 2006; Kulkarni, 2012; Johannesburg Municipality, 1995). The newly elected councillors and politicians who held senior positions were new to a job which was complex and demanding, and they considerably underestimated the task at hand. As Schuster (1995) put it, these were

> … inexperienced, third rate politicians representing the ANC at the local level. The problem is one that plagues the entire country, because most of the ANC's seasoned leaders have gone to work in the upper echelons of government. … nowhere [are the deficiencies] better illustrated than in the tortuous gestation of the Greater Johannesburg Metropolitan Council.

The auditor general identified 14 major issues in the 1997 and 1998 financial statements, at the height of the crisis, when Johannesburg was technically bankrupt. These included the high number of vacancies in senior positions, a lack of accountability, weak IT controls, and insufficient staff training.

Table 5.4: Payment Levels of Administrative Areas within Johannesburg (1996 to 1998)

Administrative area	1996	1997	1998
	%		
Orange Farm		6	3
West Soweto		14	23
Alexandra		21	13
Dobsonville		25	44
Soweto		27	33
Ennerdale	75	34	71
Lenasia	64	55	91
Johannesburg East	90	85	89
Sandton	97	87	91
Johannesburg South and North		90	93
Randburg	100	94	90
Roodepoort		98	103[26]

Source: *Johannesburg Municipality Archives*

In mid-1997, the GJMC was unable to pay a R300-million bulk-electricity bill from Eskom (Matebese, 2013, p.11). National government finally intervened in 1998 when 10, and then 15, councillors were given control of the city. Known as the C15, they had executive authority to design and implement municipal-service policies, including the outsourcing or corporatisation of municipal functions. A city manager position was created in 1999 to hasten the transition. Mr Ketso Gordhan, a respected activist, was appointed, and he developed a three-year turnaround strategy which came to be known as "iGoli 2002".

Egoli Gas and Rand Airport were sold, and most of the utilities were corporatised (ring-fenced), requiring them to operate as private-sector companies but still wholly owned by the City of Johannesburg (CoJ). From this process, City Power (CP) (electricity), Johannesburg Water, Pikitup (garbage removal), and the Johannesburg Roads Agency were created from 2000 onwards. The plan also included massive budget cuts; the budget dropped from R1.7 billion in 1995 to R500 million in 1999, unsurprisingly resulting in a deterioration in services and maintenance, and an exodus of skilled staff (Lodge, 2003; Barchiesi,

2011; Johannesburg Municipality, 1995). Although declining, the sale of electricity continued to provide a reliable revenue stream for the municipality (Figure 5.12).

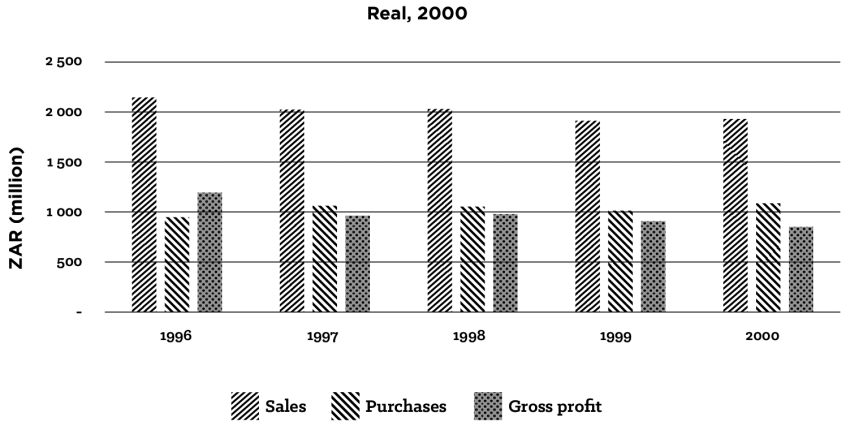


Figure 5.12: Electricity Sales and Purchases for the City of Johannesburg (1996 to 2000)

Source: *JEU Annual Reports, 1995–2000*

5.6.2 CORPORATISATION – THE ESTABLISHMENT OF CITY POWER (2001–2017)

CP was established in terms of the Companies Act. Governance, regulatory and service agreements exist between CoJ and CP to ensure performance. CP's mandate from its (only) shareholder is to buy electricity and sell it to the citizens of Johannesburg. In 2014, its two primary suppliers were Eskom (80%) and Kelvin Power Station (20%), which was privatised in 2001.

Surpluses Generated from Electricity

In its first year of operation, CP recorded a R385 million (R181 million 2015 real) loss, but this was less than 5% of the total R3.9 billion (R8.4 billion 2015 real) loss recorded by the Johannesburg Metro. Operations stabilised, and CP recorded a surplus in 2003, and has continued to do so ever since, except for 2008 when it was still profitable but high finance costs resulted in it posting a deficit. Trading surpluses from CP were the primary reason the Metro was able to achieve financial stability and operate profitably, especially from 2009 (Figure 5.13).

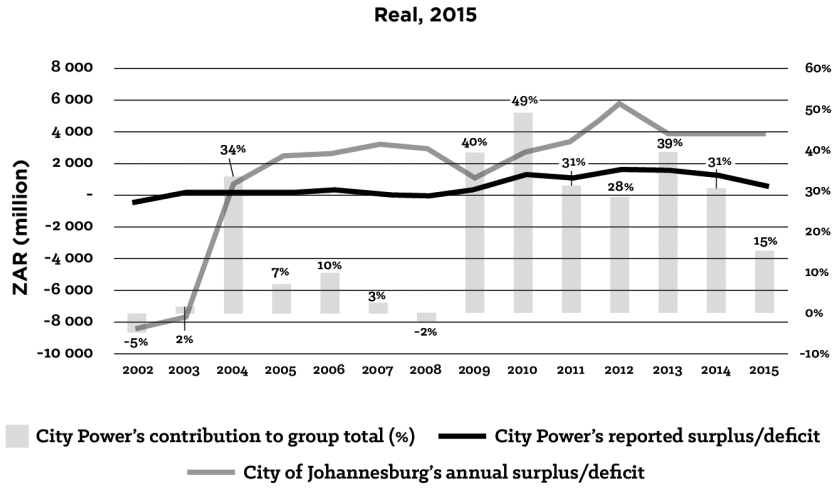


Figure 5.13: Electricity Surplus Contribution to Total Municipal Surplus for Johannesburg (2002 to 2015)

Source: *Covary (2020)*

This feat is more remarkable if bulk purchases and electricity revenue (Figure 5.14), and revenue from delivered electricity (Figure 5.15), are analysed. Figure 5.14 illustrates that the differential between bulk purchases and sales is relatively constant from 2002 until 2008, when the spread increases until 2012 and then stabilises again. Figure 5.15 shows that delivered electricity is flat from 2007 and declines markedly from 2010, however, this is not the case for bulk purchases, which remain constant and only start to decline from 2013 – implying that CP kept buying the same number of units but reselling fewer every year, i.e., there were losses in the system, but surpluses remained stable from 2009 to 2012.

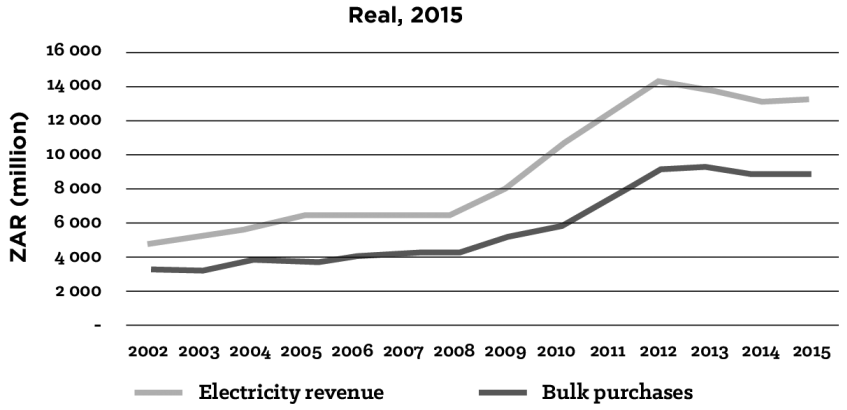


Figure 5.14: City Power Bulk Purchases and Electricity Revenue (2002 to 2015)

Source: *Covary (2020)*

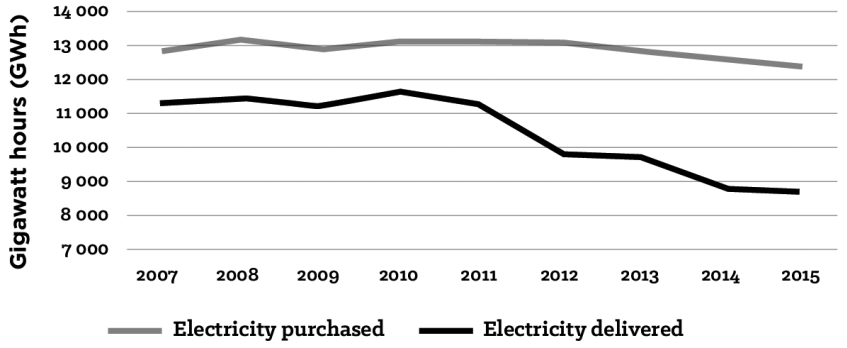


Figure 5.15: Electricity Purchased versus Delivered, Johannesburg (2007 to 2015)

Source: *Covary (2020)*

The above demonstrates the extent to which Johannesburg was able to initially capitalise on the electricity crisis. Several reasons could account for this. The first is that the disproportionately high electricity tariffs rose from a very low base (until 2007 South Africa had amongst the lowest electricity tariffs in the world) – meaning a considerable lag effect before consumers were affected badly enough to respond through a change in their usage of the service and/or through adopting new technologies that would reduce their consumption. The second is that South Africa, to start, weathered the 2008 global financial crisis relatively well, but from 2010 entered a long period of low economic growth that was punctuated by recession and a stubbornly high

unemployment rate, where it continues to languish in 2017. A third reason is that by levying a tariff increase commensurate to that of Eskom, CP created a greater return, as it gained the additional benefit from the difference between Eskom's bulk-supply rate and its own retail rate. CP's tariff increases were often greater than those of Eskom. For example, in 2010, Eskom increased tariffs by 24.8%, while CP's increase was larger, at 29%; and in 2011, Eskom's increase was 25.8%, whereas CP's was 31%. Thus, Eskom's tariff increases were by no means passed directly through CP, without alteration, on to CP's customers. Figure 5.16 shows how all six metros benefitted from increased revenue from 2008 to 2012.

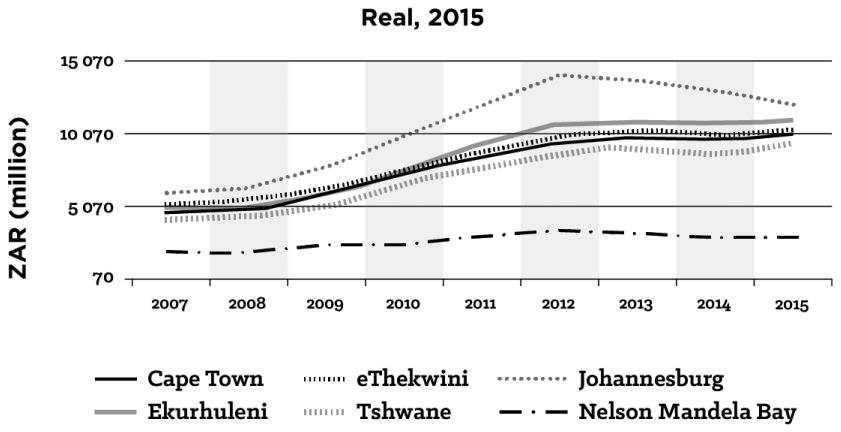


Figure 5.16: Revenue from Electricity Sales for Six Metros (2007 to 2015)

Source: *Eberhard (2015)*

These short-term gains were always going to come at a price, and many within CP knew it, but were largely powerless to do anything about it, as it was CoJ, and not CP, who decided on the annual surplus to be generated from electricity sales. Taking this one step further, CoJ develops the following year's budget knowing that shortfalls can be covered from electricity, and to a lesser extent, other trading surpluses. In other words, the electricity tariff increases are derived primarily on municipal funding requirements and not economic principles or regulatory requirements.[27] Eskom's sharp tariff increases from 2007 affected all electricity consumers and ultimately, and understandably, led to consumer resistance and reduced demand. Indeed, this was predicted from 2009. See Inglesi & Pouris (2010), Inglesi-Lotz & Pouris (2012) and Inglesi-Lotz (2011 & 2014), whose research forecast that

the magnitude and frequency of the tariff increases would first result in decreased consumption, and then lead to long-term stagnation of electricity demand – until at least 2025. This can be seen in CP's declining trend in total demand from 2008/09 (Table 5.5), which CP attributes to "slow economic recovery, energy efficiency improvement, technology conversion to exploit alternative energy sources, reduced consumption base, and a variety of other factors", which it expected to persist until 2019.

Table 5.5: City Power Total Demand 2006 to 2017 (GWh/annum)

Financial year-end	Demand (GWh/annum)	Volume growth
2005/06	12 147	3.6%
2006/07	12 900	6.2%
2007/08	13 091	1.5%
2008/09	12 938	-1.2%
2009/10	13 115	1.4%
2010/11	13 116	0.0%
2011/12	13 066	-0.4%
2012/13	12 826	-1.8%
2013/14	12 608	-1.7%
2014/15	12 361	-2.0%
2015/16	12 011	-2.8%
2016/17	11 755	-2.1%

Source: *CP (2016)*

Additionally, the CP funding model is controlled almost exclusively by CoJ. Annually, CP submits its budget requirement to CoJ, which then allocates an amount. A consequence of this approach is that CoJ is always more likely to defer CP capital investment for repairs and maintenance (see Table 5.6) to fund its own priority projects, thus exacerbating the under-investment in CP's infrastructure. Finally, CP has no direct financial control of its business, as consumers pay their accounts directly to CoJ.

CP and NERSA

In 2014, NERSA issued benchmarks to help guide distributors.

Table 5.6 compares these benchmarks against CP's 2013 to 2015 figures from their annual financial statements. It is important to note that 2011 was the last year that CP published a debt-collection percentage (91%).

Table 5.6: City Power Performance Compared against NERSA Guidelines (Real, 2015)

Guideline	Range and (mean)	2013	2014	2015
Bulk-purchase energy costs as a percentage of total costs	58%–78% (75%)	70%	73%	69%
Surplus as a percentage of electricity sales	10%–20% (15%)	11%	9%	4%
Total system losses	5%–12% (10%)	30%	30%	30%
Ratio of average sales price to average purchase price	Set at 1.58	2.24	2.25	2.10
Spending on repairs and maintenance as a percentage of sales revenue	Set at 6%	3.3%	4.4%	4.1%
Debt-collection rate	95%	N/P	N/P	N/P

Source: *Covary (2020)*

The Relationship Between Tariffs and Electricity Losses

Higher tariffs led to reduced consumption and increased non-technical losses,[28] and this can be attributed to two factors:

1. The inability of consumers to pay – an ever-present reality in a society with such high levels of inequality, made worse during weaker economic conditions and a 300% increase in electricity tariffs for the period 2007 to 2012, leading to late payment, bad debt and/or theft; and
2. An already inefficient and error-prone administrative department being immobilised when the transition to a new computer system in 2010 was mismanaged.

The now-notorious Johannesburg billing crisis led to the formation of the Joburg Advocacy Group.[29] However, the billing problem is not limited to a sub-par ICT system; it is far greater and across the board.[30] This is caused by:

- Poorly skilled and/or tardy and/or corrupt administrative staff capturing incorrect information;

- Field workers, for the same reasons, reading meters inaccurately or estimating readings; and
- New connections not being registered on the system, erroneously or for illegal gain, resulting in the provision of free electricity – this is especially prevalent in large residential estates or office parks where there is a lot of sub-metering, and although it is not quantified, it could account for as much as 4 to 6% of the energy dispatched.

A contributing factor is the difficult relationship that exists between CP and CoJ, largely the result of the operational framework described above, and made worse by the fact that the two entities have not operated from the same location for over 15 years; this has led to weak institutional linkages, impersonal relationships, and ineffective communication.

In 2010, municipal electricity mark-ups averaged 57.5%; this figure was 50.2% in 2011 (Jordaan & Dekenah, 2013, p.7). The authors cautioned that the practice of consistently above-inflation increases presents a cash-flow risk, as users respond by shifting to a more elastic state by switching to alternative energy and/or by taking additional measures to reduce consumption. This is indeed reflected by the fact that CP's energy delivered dropped from 11 723 GWh in 2011 to 8 736 GWh in 2015, while losses increased materially (see Figure 5.17 on page 178). CP's 2012 annual business plan estimated the cost of non-technical losses to be R3.8 billion, by any account a massive amount. Under the heading "Key Revenue Related Challenges", it states: "The R3.8bn losses indicated below are made up of R1.9bn administrative losses and R1.9bn of non-technical losses. The causes listed are unbilled customers, tampering, illegal connections, incorrect billing and estimates" (CP, 2012, p.33).

If one considers that the non-technical losses "challenge" was more than double the increase in turnover (R1.6 billion) – which in monetary value was greater than 30% of turnover (R12.6 billion); and, in energy terms, represented 24% of GWh delivered – then it is nothing less than an unmitigated disaster and a major business risk. The question that naturally arises is: How did it come to this?

In seeking an explanation, we start with technical losses. Discussions with industry professionals corroborate the guidelines of NERSA, who have set 6 to 7% as the benchmark for distribution losses. CP reported technical losses of 6% until 2002; the following year, the figure was increased to 9%, where it has remained. The basis for this was an

internal report which identified a few remote outlying areas within the network with losses of 9%; this higher figure was used to reflect the state of the entire network, allowing for the re-categorisation of up to 3% of non-technical losses. Indeed, the 2012 annual plan suggests as much: "[Technical losses have] been assumed to be 9%. Tests are currently underway to validate this figure, and initial results indicate that this figure may be 7%" (CP, 2012, p.36). These test results were never made public or referred to again and the losses have remained at 9% in the subsequent plans (2013 to 2017).

With regards to non-technical losses, these were generally within the NERSA guidelines of up to 5% for the period 2005 to 2011, but exploded from 2012 (Figure 5.17). Three reasons account for the underlying causes leading to theft and administrative errors:

1. The new billing system;
2. The delayed effect of the tariff increases; and
3. The decline in the economy.

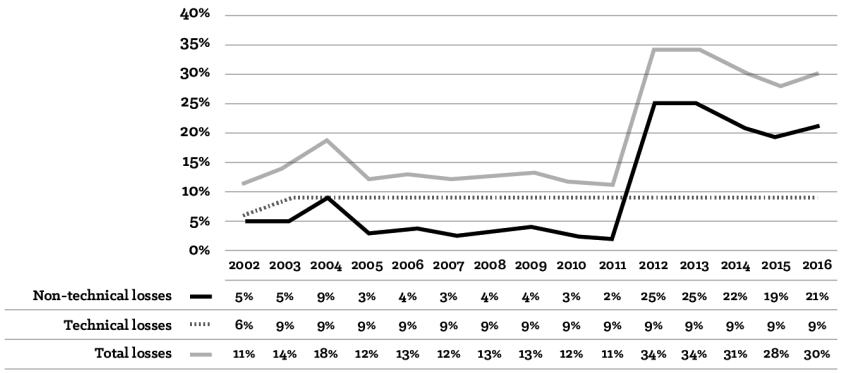
What is abundantly clear from the annual business plans during this period is that although the losses are recognised as high-priority, there are only loosely described action items to address them, such as:

> Non-technical losses continue to be a challenge, due to increased theft and vandalism. (*Annual Business Plan*, 2014, p.70)

> Meter readers must face penalties for poor data capturing. (*Annual Business Plan*, 2015, p.51)

> Electricity losses, technical and non-technical, are too high at 30% and this requires urgent attention. (*Annual Business Plan*, 2016, p.79)

Many more statements could be cited, but the point is that having identified and interrogated the causes of non-technical losses in some detail, two things remain constant: their high levels persist, as does the strong commitment to reduce them. In short, little progress is being made.



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Non-technical losses	5%	5%	9%	3%	4%	3%	4%	4%	3%	2%	25%	25%	22%	19%	21%
Technical losses	6%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Total losses	11%	14%	18%	12%	13%	12%	13%	13%	12%	11%	34%	34%	31%	28%	30%

Figure 5.17: Total Electricity Losses at City Power (2002 to 2016)

The 2015 *Annual Business Plan* (p.50), states that non-technical losses may be considered to be revenue losses. Which indeed they are. But to what extent? Figure 5.18 illustrates two things. The first, represented by the line graphs, is the consequence (delayed) of high annual tariff increases on non-technical losses, which have remained at 9%. Tariff increases of 22% (2007), 31% (2008), 29% (2009) and 30% (2010) were followed by a more than ten-fold increase in losses (2% to 25% in 2011 – Figure 5.17). It is true that losses cannot be attributed solely to high tariffs, and the stabilisation and slight improvement from 2013 could be attributed to more accurate meter readings and billing. The second thing that Figure 5.18 illustrates, through the bars, is the impact that reduced consumption and high losses have had on surpluses. Using the NERSA guideline of 10% (mean) for total system losses as the cap, the value of lost revenue in excess of 10% is quantified. At 2015 real prices, system losses over 10% for the ten-year period 2006 to 2015 amounted to over R8.4 billion.

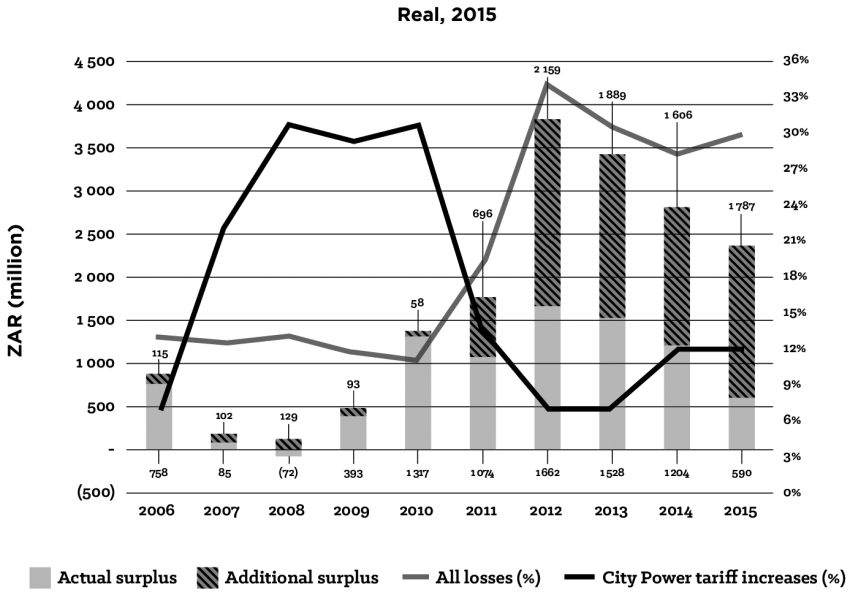


Figure 5.18: Revised Electricity Surplus for Johannesburg if Losses are Capped at 10% (2006 to 2015)

Business Model Conflicts Faced by CP Management

Competing priorities are a reality for every business and perhaps more so for government, which has the additional dynamics of having to service and satisfy its constituency, of needing to align with broader government policies and objectives, of dealing with institutional rivalries, and of adjusting to the presiding economic environment. In addition to the tariff-setting constraints detailed above, MEUs operate under a framework that imposes major conflicts. The most relevant of these are each discussed in their own section below.

National Energy Efficiency and Renewable Energy Targets (NEES)

The NEES of 2005 set an overall voluntary target of 12% by 2015, using 2000 as the baseline year.[31] The residential and commercial voluntary target was set at 15%. The post-2015 NEES[32] found that energy intensity improved by 23.7%, significantly more than the 15% target. However, the post-2015 strategy does not distinguish between the individual contributions of autonomous change (changes in structure of the economy), technological advancements, and deliberate policy interventions – where the first two would take place irrespectively, and

thus this figure merely serves as a proxy to efficiency improvements and not as a like-for-like comparison.[33] The dilemma faced by CP, and by all municipal distributors, is one of split incentives. On the one hand, under the constitutional requirement of co-operative governance between the three spheres of government, CP (as are all MEUs) is obliged to implement national policy, which targets reduced electricity consumption. The implication thereof is a reduction in revenues. On the other hand, CP's sole shareholder, who sets annual tariff increases, relies upon the electricity trading surpluses to fund its operations. Clearly, there is little incentive for CoJ or CP to actively pursue a nationally set voluntary target. The only area of congruence, where CP has an incentive to promote energy efficiency amongst smaller users, is in those they subsidise or who have a high percentage of bad debt. If the 2008 supply shortages are thrown into the mix, the CP strategy is understandable – a combination of measures for low-income programmes, which also satisfies social-welfare objectives, and load shifting over a total net reduction.

> If a consumer is using [an] outdated and very inefficient lamp at night, when our Eskom tariff is the lowest, then that is not my problem. But if someone is using high-consumption, inefficient equipment in winter during peak periods, when I can only recover part of the tariff [selling at a loss] then I am going to do something about that.[34]

Single Supplier (Eskom) Means that CP is a Price-Taker

The legislative structure forces CP to buy from Eskom. A "very small contribution is sourced from Kelvin Power Station" (CP, 2016) and negligible amounts from IPPs. The existing legislative structure does not support municipal generation, and those in the private sector who would generate electricity must obtain a licence to do so from NERSA (with very few granted of any scale), or approval under a ministerial determination. This creates two issues, one direct and the other indirect, both with adverse consequences. The first, and direct effect, is that CP may not generate its own electricity, as it did very successfully in the past, and which is now viable with technological advances in RE. During the 1980s, when Orlando was operational, CP was able to negotiate discounts from Eskom. Conceivably, creating a competitive environment would result in a similar outcome. An added benefit would be improved energy security. The second, and indirect, effect is that Eskom continues to maximise its returns from the residential and commercial sectors, with a revenue-to-sales ratio of 1.56, while the same ratio for mining is 0.96, and 0.82 for the industrial sector (Thopil

& Pouris, 2013) – effectively meaning that it will be selling electricity to these sectors at a discount. Coupled with the city's requirement for high returns to fund other functions, the price of electricity in Johannesburg is the highest in the country (Table 5.7). Thus, the city continues to lose large users who are moving to surrounding areas that offer a lower rate. eThekwini, Tshwane and Ekurhuleni are nearby.

Table 5.7: Average Municipal Effective Tariff (Revenue from Sale of Electricity/Units Sold)

Metro (cents per kWh, real = 2015)	2007	2008	2009	2010	2011	2012	2013	2014	2015
City of Cape Town	45	45	56	71	81	91	96	96	99
eThekwini	47	50	56	70	81	91	95	94	102
CoJ	**53**	**55**	**70**	**85**	**108**	**144**	**141**	**148**	**140**
Ekurhuleni	46	45	53	69	98	111	112	113	120
Tshwane	48	52	60	74	86	96	102	103	113
Nelson Mandela Bay				68	77	91	96	93	96
Average (Metros)	48	49	59	74	92	109	111	111	114
Eskom's average to municipalities	27	27	33	41	47	57	61	63	63

Source: *Eberhard (2015)*

Embedded Generation and the Death Spiral

Due to high electricity tariffs, supply shortages (blackouts), and increased environmental concerns, the residential sector has seen an increased uptake in photovoltaic systems – the price of which have also dropped – in households and small businesses. CP estimates that 30 MW has been installed in Johannesburg, and this figure is climbing.[35] This exacerbates the utility "death spiral", which is an international phenomenon, and may spell the end for utilities, as embedded generation (self-generation; the most common form of which is through using photovoltaic panels) results in revenue erosion, declining profits, rising costs and weakening credit metrics. This prompted studies (see Janisch, 2013) and internal modelling by municipal distributors. The industry called for NERSA to pronounce guidelines and regulations, but after issuing a discussion document in 2015 followed by guidelines, these were withdrawn and were to be included in the DoE's new licencing requirements for all generators. CP has implemented a policy of paying only 40c/kWh for electricity generated, way below the over R1.50/kWh it charges for supply. Very

few are enticed by the offer, and opt to install outside the structure. CP acknowledges this is a problem, but as with their demand-side management programmes, has not acted.

5.7 CONCLUSION

In the more than two decades following the 1994 elections, two diverging realities appear to have been at play: policy and practice. Recognising that the existing ESI model, which had been in place for decades, had outlived its usefulness, government's objective of reform was to address policy and practices that had become unsuitable or defective. Certainly, at face value, reform was necessary to deal with challenges that included:

- There being far too many MEUs, each of which had their own tariff structures;
- Non-cost-reflective tariffs;
- Many smaller- and medium-sized MEUs operating at a loss;
- A lack of capital investments to maintain and service the ageing and neglected EDI infrastructure;
- The inability of smaller- and medium-sized MEUs to hire and retain competent staff; and
- Efforts to reverse the practice of non-payment and theft of electricity failing, with the situation only worsening.

In seeking a solution, national government's approach was certainly not haphazard – as has been shown. Looking back, more than anything, the period prior to and after 1994 was one that touted wholesale reform to improve service delivery. The review, however, has shown that little has come to pass, other than the licenced municipal distributors halving in number (400 to about 187). Electricity distribution, though, remains a primary contributor to municipal revenue, as it always has. Indeed, the self-reinforcing path-dependent phenomenon of increasing returns has not only seen warnings about its unsustainability dating as far back as 1930 go unheeded, but has also been significantly ratcheted up since 1994, despite national government policy to chart a new path.

Notes

1. White women gained the right to vote in national elections on 19 May 1930.
2. Based on an interview with Richard Frantz, ex-CEO and director of MM, whose father was a municipal manager in Cape Town in the 1940s and 1950s.
3. Although the majority of the delegates at the conventions were electrical engineers, councillors and mayors were well represented and initially stayed for the full conference. These delegates represented different constituencies which mostly, but not always, led to the voicing of differing views. By the 1960s, as travel became more accessible and other issues were of greater priority, fewer mayors and councillors attended, and they generally only stayed for the keynote addresses.
4. The Ordinance was postponed due to an objection by the City of Cape Town. It never came into effect.
5. Town electrical engineer of Johannesburg, B. Sankey, in *Municipal Magazine* (1927). Sourced from Maud (1938).
6. The ECB was established under the Electricity Act of 1922 to regulate holders of licences, excluding local authorities, government departments, the former South African Republic, or self-producers not selling electricity. Marquard (2006, p.133) notes that the ECB had almost no capacity (with three to five board members and one staff member), finding no records prior to 1978. It appeared that the ECB's time was taken up playing a mediating and facilitative role in resolving disputes of rights of supply and addressing consumer grievances.
7. The conditions are not stated in the minutes, but based on the tone and language, it is assumed that they were one-sided and favoured Escom.
8. A copy of the letter is not attached. The contents are derived based on the responses from the meeting minutes.
9. The author could not find meeting minutes in the archives, but references in the AMEU minutes make it clear that UME, AMEU, Escom and ECB were present. It is also likely that national government was represented, but this is not certain.
10. This information was gleaned during a meeting the author had with Stan Bridgens on 5 September 2016.
11. These included: Chamber of Mines, ANC, National Union of Mineworkers (NUM), National Union of Metal Workers of South Africa (NUMSA), Department of Mineral and Energy Affairs, Eskom, organised business, South African National Civic Organisation (SANCO), South African Agricultural Union (SAAU), UME, and the Energy Development Research Centre.
12. The terms "regionalisation" and "rationalisation" are used interchangeably in the various reports. The research quotes the term used based on the report being sourced.

13. NELF was formed in 1993, at which Eskom came to an agreement with the ANC that it would electrify 2.5 million homes between 1994 and 1999 (see "Phase IV: Regeneration (1985–1994)" on page 104).
14. Martin Pomeroy joined the municipality in 1959 and moved to the electricity undertaking in 1979. He was the city electrical engineer from 1992 to 1994 and the GM from 1995 to 1996. The author interviewed him on 27 January 2017.
15. The financial statements reflect the increase but provide no further explanation. The annual increase in the property tariff rose marginally from 3.97 cents to 4.1 cents in the rand, providing little insight.
16. Randburg was staunchly Afrikaans and an NP stronghold; giving it autonomy would entrench NP support. This was not the case in Sandton, and the NP's motive here was to split the vote in a manner that would weaken the opposition's chances of taking control of the Johannesburg municipality.
17. From a meeting on 5 September 2016 between the author and Stan Bridgens, former director of technical services of JEU. Bridgens was employed at JEU from 1958 to 1995.
18. It was concluded in the ERIC process that using provincial boundaries for REDs was not appropriate, as nine would be too many and some would not be financially viable (Conradie & Messerschmidt, 2000, p.317).
19. SALGA replaced the UME.
20. MEUs are subject to the Municipal Systems Act and the Municipal Financial Management Act (MFMA), whereas Eskom is a public entity and subject to the Public Finance Management Act (PFMA). The PFMA and MFMA are not consistent with each other.
21. The report, on the whole, was adopted by the DME in February 2001 as the strategy and blueprint to reform the sector.
22. All users taking supply at under 132 kV fell under REDs, while users above the threshold were supplied directly by Eskom.
23. Two months later, in December 2010, the government formally announced that Cabinet had taken the decision to terminate EDI restructuring.
24. The white population of South Africa primarily descended from British or Dutch nationals who, following the Anglo-Boer Wars, were distrustful of each other. However, the country attracted many migrants from Europe (Portuguese, Greek, Italian, Jewish and others) who tended to stick together.
25. In 1996, Martin Pomeroy, JEU's GM, took early retirement, citing continual political interference. Budget allocated for capital expenditure or other previously agreed areas would be taken on short notice to pay for other municipal activities, resulting in an under-maintained network and low employee morale. The author gleaned this from an interview with Pomeroy on 27 January 2017.
26. This figure is not erroneous and represents an over-recovery.
27. One of the CP interviewees confirmed this practice to the author. The

interviewee stated that 2015/16 was the first year that the CP tariff adhered to the NERSA-prescribed methodology, which derives the tariff from a weighted average: 70% of the increase is made up by Eskom's tariff increase, and the remaining 30% of it is made up by an increase based on the Consumer Price Index (CPI).

28. Non-technical losses are made up of administrative issues (billing using estimates instead of actual readings, unread meters, incorrect billing, etc.) and non-administrative issues (illegal connections, theft, meter tampering, etc.).
29. See http://www.joburgadvocacy.org/ (accessed 17 February 2021).
30. The author gleaned this from interviews with employees of and consultants to CP.
31. Since the first NEES was published, this metric has always been uncertain, primarily because of the paucity of the available data and DoE's inability to provide clear guidance.
32. As at the end of 2017, this has been circulated for public comment and finalised, but as yet it has not been adopted by Parliament.
33. Declines in energy intensity are a proxy for efficiency improvements, provided: a) energy intensity is represented at an appropriate level of disaggregation to provide meaningful interpretation, and b) other explanatory and behavioural factors are isolated and accounted for. See https://energy.gov/eere/analysis/energy-intensity-indicators-efficiency-vs-intensity (accessed 17 February 2021).
34. Interview with Paul Vermeulen, head of demand-side management at CP, 12 August 2016.
35. A workshop held in February 2020 heard from the South African Photovoltaic Industry Association that embedded generation was estimated at over 2 GW. This figure was validated by the Eskom representative.

CONCLUSION

The previous chapters have sought to illustrate the policy dimension of national government's ongoing, over-a-century-long pursuit of two fundamental, but diametrically opposed objectives, whose inherent contradictions have driven an enduring conflict since the formation of the Union in 1910 that has reached fever pitch in the last two decades:

1. An over-burdened, financially "self-sufficient" local government with limited scope to collect revenue to fund its mandated municipal functions (having only property tax and surpluses from services as sources of revenue – with the majority of income raised from electricity sales); and
2. A vertically integrated national utility, Eskom.

Complicating matters even further are conflicting national objectives. On the one hand, neo-liberal economic policies adopted by government support cost-reflective tariffs to enhance competitiveness and productivity. Yet on the other hand, national policy calls for developmental local government, with a significant portion of funding sourced through cross-subsidisation.

The research presented in this book has thus shown that these dichotomies have been, and continue to be, the basis for the discord that exists in the ESI and which leads to broader political and economic fallout for the country, and to the demise of municipal EDI reform from the late 1990s. This was once again demonstrated from 2010, as a new and imminent structural crisis, the so-called death spiral, threatens the entire ESI, and the EDI in particular. Certainly, the failure and perhaps even inability of national and local government, and of public entities such as NERSA and Eskom, to adequately deal with the crisis due to

lock-in, is impacting negatively on developmental local government, and specifically on service delivery. If this is left unresolved, it will undoubtedly result in the same impasse (failure to restructure) – with even graver economic and political consequences.

Ultimately, this book has interrogated the complexities created by using surpluses from electricity sales to cross-subsidise municipal functions, which conflicts with national priorities; while the historical analysis I have undertaken has shown that this practice is not new. It developed over a prolonged period to satisfy other, but ultimately competing and counter-productive, objectives of national government, and the linkages it created have by now strengthened to such an extent that disentangling them is no longer straightforward. Indeed, the effects of such an unravelling would not only be universal, but likely extreme, as shown in Figure ii.

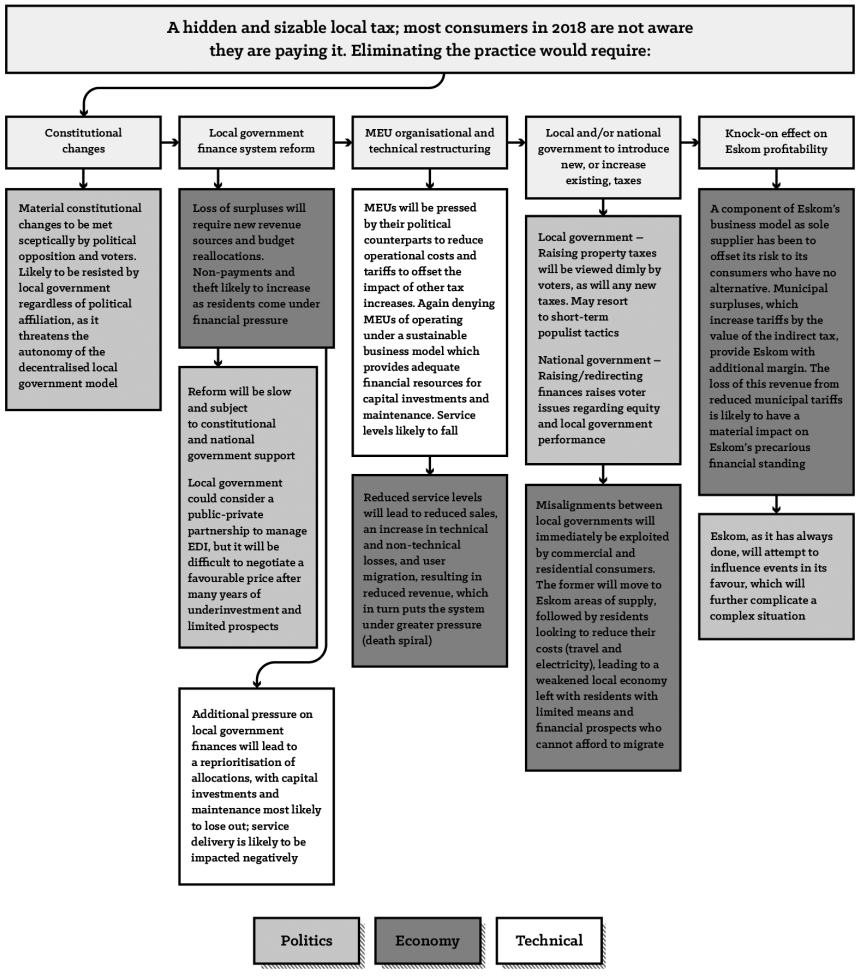


Figure ii: Political, Economic and Technical Linkages in EDI

In retracing the history of all actors within this context, we have seen the complex relationship between the national economy, the three tiers of government, and the ESI – where each actor is represented by different institutions with diverse mandates and interests – resulting in the inevitable situation of contradictory/conflicting policy positions and competing objectives. Such a situation may not immediately qualify as being either overly unique or material, as many other functions or services offered by government and its agencies require compromise. But how it unfolds may matter; and for the EDI it does. As this book has shown, here, the current institutional arrangements regarding municipal EDI are reaching breaking point, with dire social and

economic consequences for all; in a situation not receiving the attention it deserves, as it is overshadowed by events engulfing Eskom. However, connection points between these two crises exist. Both shield operational inefficiencies, as well as consumer resistance, manifested at one end by reduced consumption and electricity theft, and at the other through defection (fuel switching and embedded generation) and improved energy efficiency. Ultimately, national outages caused by mismanagement (coal-supply contracts), plant shutdowns (maintenance), delays in commissioning new plants (mismanagement), financial distress (corruption, staff strikes and pay demands), will attract public attention over localised municipal outages varying from one MEU to the next; but both have equally ominous consequences.

This all then makes it necessary to determine the extent to which circumstances matter and to examine how events evolved. Here, two options exist:

1. A narrow analysis can be conducted, as was done for the implementation of REDs, which focused on national government priorities. This is not to imply that the approach was rushed or not taken seriously; the EDI reform process lasted for about 12 years and cost billions of rand. However, the research has pointed out how important factors were sidestepped, underestimated or flat out ignored – issues which were material sticking points for local government and MEUs. This includes, for example, the contradiction and perceived unfairness of the Constitution allocating municipal distribution to local government, but MEUs being required to cede the "golden share" to national government under the proposed REDs model; or
2. A detailed and accurately sequenced historical account of events can be made, providing a complete understanding of institutional and policy development. Such understanding is more likely to provide the basis upon which appropriate decisions can be taken.

To date, the former, more expedient approach, has led to little reform, and if anything, has put the system under greater strain. Thus, to contribute towards a resolution, this book presents a detailed and holistic analysis, which not only introduces new insights, but also explains the rationale behind the "stickiness" of existing path dependency. In this, a further distinction also needs to be made between grasping historical events that resulted in the present-day

dynamics of the current crisis, versus attempting to take corrective action. For the former, a historical analysis is appropriate, whereas for the latter, a historical understanding is required.

Within the context of developing historical understanding, and with so many of the findings in this research pointing to the currently entrenched system's resilience and ability to endure, an important question is: Are the odds then not heavily stacked in favour of continued path dependence? I believe, possibly not. Table i on pages 193–196 illustrates how the relief of rates (cross-subsidisation) has progressively evolved into a cumulative crisis since it was first flagged. In the table, concerns raised by the AMEU at the 1936 conference (and one subsequent factor identified in the research) are listed in the first column. The status of each is then rated at three key points in time: the two identified critical junctures and the present day (2017). Research findings then justify the allocated rating where necessary – with the three rankings, or metrics, applied being "Limited", "Moderate", and "Critical". Here, the objective is not to provide a financial quantification of the impact of cross-subsidisation on the economy; nor does this analysis mean to imply that electricity tariffs are higher solely, or even largely, as a result of cross-subsidisation. Electricity tariff increases have, specifically from 1969, almost exclusively been the sole preserve of Eskom; and indeed, a 2015 comparative analysis found municipal tariffs in several categories to be cheaper than Eskom's (Yelland, 2015).

The table's objectives are thus twofold. The research has demonstrated how the relief of rates was inherited from the British system and retained even when Britain, along with New Zealand and New York City, amongst others, discarded (indeed outlawed) the practice in the 1930s. Locally, at this time however, with Escom's sole focus on servicing the mining industry, the practice was serving local government funding requirements well, becoming ever more entrenched as residential demand grew. These increasing returns naturally led to stickiness despite credible economic theory to the contrary, which remains the case in 2017. Thus, the first objective is to ascertain how the context has changed. In other words: Why do concerns identified in the mid-1930s only appear to be threatening the entire system some 80 years later? Is it that it was a necessary requirement for all of them to manifest? Here, it then also becomes particularly significant to rate the indicators at other historical points to understand the variations in the ranking results. Thus, when one examines the table, the complete dominance of the "Critical" ranking in 2017, suggests a tipping point, where a new critical juncture that opens the door to change, may be imminent – not as an exogenous

shock, but rather as a culmination of events of an ongoing process. The second objective is thus to cast light on the potential of such a juncture occurring, which if handled correctly, will allow for meaningful and long-overdue reform to occur. Here, this suggests that the probability of change may significantly advance within the next five years – not by design – but through the combination of:

1. Deterioration in municipal finance – caused by a combination of corruption, incompetence, a weak economy, and cross-subsidisation reaching its economic limits; and
2. Revolts related to service delivery and infrastructure, which may force change through protest action by lower-income consumers and reduced consumption by MEUs' core profitable consumers, who through technological advances (Arthur, 1989) now have viable and cost-effective alternatives.

Table i: Impact of Relief of Rates (1936–2017)

Concern with relief of rates	1936	1970	1996/98	2017
Inflated tariffs raise the likelihood of loss of revenue through reduced sales/fuel switching	Limited – ESI in growth phase. Supply shortages as national grid and large Escom plants still under construction	Limited – South Africa's economically most-prosperous decade	Moderate – excess supply leads to tariff decreases (real terms); still unaffordable for many	Critical – 300%-plus increase in tariffs from 2008 to 2013
Research findings				
Theory warns that business and residents evade, or relocate to municipalities with lower costs. The research found JEU higher electricity costs contributed (not primarily but not insignificantly) to the early 1990s migration to Sandton, and from 2000 to high non-technical losses				
Concern with relief of rates	**1936**	**1970**	**1996/98**	**2017**
High tariffs ignore the needs of poor and large households (regressive tax)[1]	Moderate – "poor-white" problem	Limited	Critical – addressed through national policy	Critical – relief provided through Free Basic Electricity (FBE), but insufficient in a context of high unemployment, inequality and low economic growth (see Chapter 2: 2.6.5 on page 51)
Research findings				
The research has found that nationally, and specifically in Johannesburg (as per the case study), the high levels of non-payment are a combination of an inability to pay, and protest at the inadequate service-delivery levels				

Table i: Impact of Relief of Rates (1936–2017) (continued …)

Concern with relief of rates	1936	1970	1996/98	2017
Compromises prudent accounting practices (depreciation, redemption), leading to deterioration of system as surpluses are prioritised for relief of rates	Limited – infrastructure relatively new. AMEU concerned about the future	Moderate – networks and generation plants ageing. Increased demands on local government	Critical – service delivery to previously unserved BLAs funded largely through cross-subsidisation	Critical – same as 1996/98
Research findings				
Table 5.6 (on page 175 in Chapter 5) demonstrates the extent to which CP's performance is deficient in meeting the NERSA performance guidelines				
Concern with relief of rates	**1936**	**1970**	**1996/98**	**2017**
Transfer of surpluses leads to little or no reserves, requiring MEUs to take loans to finance new equipment and operations, adding interest costs and necessitating more tariff increases	Moderate – as per AMEU minutes	Moderate – no evidence found to suggest otherwise. Municipal tariffs were increased in line with Eskom	Critical – case-by-case basis. Johannesburg, on the verge of bankruptcy, diverted all surplus revenue to the municipal cause	Critical – MEU under-investing by as much as R2.5 billion per annum
Research findings				
Although financial statements were not scrutinised to determine if this was indeed the case, the research did confirm that large surpluses are being transferred to subsidise other municipal functions at the expense of capital investment				

Table i: Impact of Relief of Rates (1936–2017) (continued …)

Concern with relief of rates	1936	1970	1996/98	2017
Electricity provision must be efficient (cost-reflective rates and without subsidy) to stimulate the economy	Moderate – tariffs 14.5% higher to fund relief of rates	Moderate	Critical – new users are low users, with most unable to afford costs	Critical – high tariffs have led to theft and delinquent accounts
Research findings				
The relief of rates has aided the false economy under which Eskom operates (expanded upon in the closing paragraphs below)				
Concern with relief of rates	**1936**	**1970**	**1996/98**	**2017**
Doubtful practice – surpluses vary annually; an over-reliance may lead to funding problems if sales/surpluses decrease	Moderate – WLAs in growth phase	Moderate – WLAs about to enter into economic decline phase	Moderate – Eskom over-supply keeps system in balance, but warning signs present	Critical – High tariffs and losses have led to large surplus reductions
Research findings				
The research has confirmed that this has materialised since around 2010. Raised individually by municipalities and through SALGA, gaining in momentum – primary topic at CIGFARO 2017 conference				
Concern with relief of rates	**1936**	**1970**	**1996/98**	**2017**
Technological advances may lead to consumers switching to other energy sources, especially if tariffs are too high	Limited – new electrical equipment and alternatives limited	Limited – new electrical equipment and alternatives limited	Limited – electrification and reduced electricity tariffs fuelled demand	Critical – high tariffs, technological alternatives and climate change now driving demand down
Research findings				
Concerns with regards to the death spiral are not limited to Eskom. Conversely, consumers who cannot afford the tariffs are reverting to unsafe energy forms or theft, undermining the national electrification project				

Table i: Impact of Relief of Rates (1936–2017) (continued …)

Concern with relief of rates	1936	1970	1996/98	2017
Some municipal functions are unprofitable by their nature; thus cross-subsidisation is necessary – swings and roundabouts	Critical – thus proposal to place a cap on transfers and levy a direct tax	Critical – made worse by loss of generation rights, placing greater pressure on municipal finances	Critical – address apartheid inequities, but do so in a transparent manner viz direct tax	Critical – increase national contribution and/or introduce new municipal revenue sources
Research findings				
The central theme of this research, with findings that support it, is that local government has been allocated insufficient and inappropriate (cross-subsidisation) own-revenue sources to fund developmental government, undermining the legitimacy of government				
Concern with relief of rates (post-1936)	**1936**	**1970**	**1996/98**	**2017**
Corruption and/or reduced competency of local government, leading to budget shortfalls	No evidence found to suggest that this existed	Moderate – no evidence of widespread corruption. Purging of municipal staff to make way for Afrikaans speakers had affected service, leading to calls for a commission of inquiry into municipal incompetence	Critical – employment equity at government level leads to loss of experienced staff who were often replaced by inexperienced political appointees. Corruption on the rise since early 1990s	Critical – as per auditor-general and NT findings, manifested by correlation between technical failure and alignment with political factions
Research findings				
As per 2017 comment				

Eskom Epilogue

While musing on the findings in this book and the implications thereof for local government, its MEUs and its finances, however, it is worth taking some time to reflect on the elephant in the room: Eskom.

Before doing so, it would be unfair and unkind to overlook the efforts and achievements of the countless dedicated employees who over the past 95 years committed themselves to building a world-class utility, which continues to power the economy and was the fourth-largest in the world at one point.

The utility however has enjoyed a charmed life, which may very well be coming to its teleological end as it faces the same "death spiral" challenges that all large utilities around the world are grappling with. Eskom's situation though, is perhaps more extreme. Here, the majority of the country's minerals, the "wasting asset", have been extracted – ore yields are declining, mining depths increasing, and amidst a prolonged cycle of depressed commodity prices, many mines are closing or contracting, with the US$ price of gold, for example, decreasing by 10% for the period 2012 to 2017. It would be alarmist and overstating matters to believe that mining activity is nearing the end of the road. It is not, but it has declined, and this can be seen by the electricity demand, with volumes in 2017/18 at the same level as those in 2007.

Of greater concern however (and here take your pick between actual outcome or DoE margin of error), "For the financial year ending March 2018, the actual total electricity consumed is about 30% less than what was projected in the Integrated Resource Plan of 2010"[2] (Radebe, 2018). Thus, the economy has started to transition to a significantly less energy-intensive service one, which profoundly changes the Eskom modus operandi and necessitates realism and an ability to adapt its business model to ensure its survival. Indeed, Jaglin and Dubresson (2016) predict its demise within a five-year period – at the very least in its current structure.

On reflecting somewhat deeper into what is present-day Eskom, the author can't help but conclude that the special place that it has held in government's decision-making, both pre- and post-1994, created a false economy for it, which has finally caught up with the utility. Several instances of this, drawn from previous chapters, are detailed to illustrate the point.

Firstly, the Johannesburg case study has shown that JEU was a well-operated utility, which was a net seller of electricity to Escom in the 1950s. This provided the municipality with an additional source of revenue, which it used to reduce the impact that cross-subsidisation placed on its tariffs. In the 1960s, when Escom's new plants had been commissioned and its purchases from the JEU started to decline, the JEU responded by keeping its generation costs below Escom's, and when they were higher, it took supply from the national utility to ensure that its tariffs were competitive and its surpluses maximised. Although not ideal from Escom's perspective, it was sheltered from the full effect of competitive forces by the Power Act of 1910, which disallowed MEUs from selling to large users and outside their area of jurisdiction, with the result that the JEU was not able to maximise returns on cost advantages. The only outlet for any generation

surpluses was Escom, who paid a lower tariff than what large users would; and only if it needed supply. If this was not enough: Escom conspired and succeeded in ending municipal generation in 1969, in flagrant disregard of the provisions of the Power Act. Incensed, the JEU took the matter to the highest court to challenge the Provincial Administrator's refusal to approve the application, but political pressure from senior levels in national government (as it was widely expected that the court would rule in the JEU's favour) saw them withdraw the case just days prior to the court hearing.

Secondly, both Escom and Eskom enjoyed privileges that other state-owned enterprises did not. This manifested in different forms. With regards to funding, anything was possible – from the conventional (local and international loans, pre- and post-1994), to the creative (the Capital Development Fund in the early 1970s), to the blunt (large tariff increases at short notice to fund shortfalls and inefficiencies – again pre- and post-1994 – and most recently with the new build programme of Medupi and Kusile). Turning to demand projections, which underpinned Eskom's new build programme; these were overly optimistic in the 1960s and 1970s and more recently from 2005, while in both instances the basis of the projections was questionable and actual demand failed to match the forecast, thus resulting in large long-term surpluses and debt.

Then there is Eskom's ability to change national government's stance to its benefit, but almost always to the detriment of the national economy. Here, we can consider its influence on the Borckenhagen Inquiry, or its stacking of the newly formed NER in the mid-1990s with Eskom retirees (led by its former CEO), or its ability to convince the DoE to get the ISMO "off the DoE's table", to name but a few. These examples suggest that the short periods during which South Africa has had amongst the cheapest electricity tariffs in the world, have come at a larger cost over the long term, particularly when operational inefficiencies take hold. These necessitate bailouts in the form of government guarantees or loans and/or steep and rapid tariff increases to consumers big and small; with an unacceptably negative impact on the indigent.

How this will conclude is unclear, as Eskom, during its 95-year history, has demonstrated an uncanny ability to survive. Indeed, correct action commenced from late 2018, with the appointment of a credible CEO (Phakamani Hadebe) and a new chairman of the board (Jabu Mabuza), and the replacement of Minister Lynne Brown (with Pravin Gordhan) leading to an (ongoing) clean out of tainted management. Whether or not the new team can restore governance, confidence and

morale and chart a new strategy to overcome key challenges, remains to be seen. Under the circumstances, Jaglin and Dubresson's prediction seems not only reasonable but likely.

In closing, it should be noted that municipal EDI is one of many issues affecting local government, as observed by several academics and most notably Siddle (2011), Stanton (2009) and Thornhill[3] (2016). Indeed, successful or more sustainable EDI reform will by no means resolve the state of crisis of local government. And while NT may very well argue, with some truth, that local government is sufficiently funded, issues of performance (incompetence and financial mismanagement) are where the bulk of the challenges lie. Figure iii lists several matters plaguing local government, and once again stresses that these are unlikely to be resolved in isolation or without full understanding of their root causes.

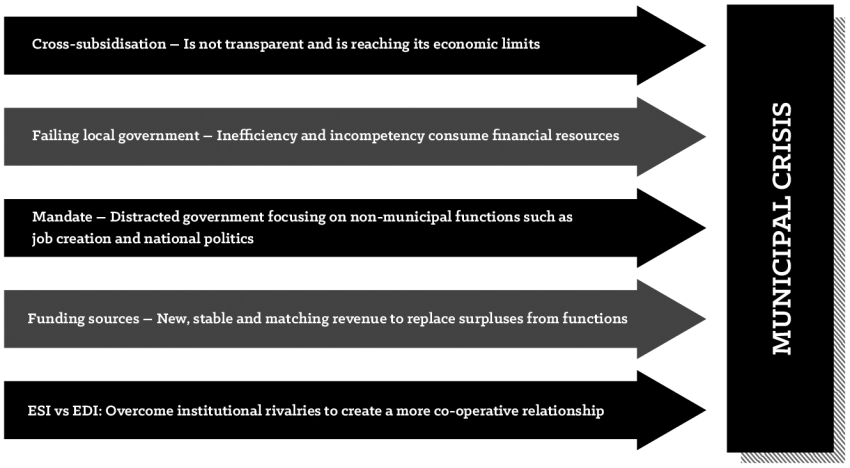


Figure iii: Summary of Factors Contributing to Municipal Crisis

Ultimately, the incalculable scope of challenges facing local government, as well as electricity supply and distribution, need not be seen as well-nigh insurmountable. It is thus the hope of this book that by unearthing forgotten but relevant information and using a recognised theoretical framework, the author has provided credible reasons for the strong linkages that exist between electricity and politics, and delivered fresh perspectives. These perspectives, the author believes, have the potential to inspire positive new directions, which in some way contribute to eventually breaking the current impasse – ending the repeating cycle electricity provision has found itself locked into for over a century.

Notes

1. BLAs were excluded under apartheid. Once absorbed in 1994, the real situation is reflected.
2. According to the DoE website, "The Integrated Resource Plan in the South African context is not the Energy Plan – it is a National Electricity Plan. It is not a short or medium-term operational plan but a plan that directs the expansion of the electricity supply over the given period. Its purpose is the identification of the requisite investments in the electricity sector that maximize the national interest." See http://www.energy.gov.za/IRP/overview.html (accessed 25 March 2021).
3. Interview with the author, 13 May 2016.

ADDENDUM: 2017 TO APRIL 2021 UPDATE

Between 2017, when the research this book is based on was first published, and early 2021, much has changed. Yet, much has also stayed the same. At the time of writing, the lessons of the past have yet to fully inform the strategies of the future, but shifts have occurred and are worth touching on.

National Government

On 13 February 2018, the ANC recalled President Jacob Zuma, despite his protestations and pleas to complete his term. The ANC's senior leadership could no longer ignore the damage wreaked by the Zuma administration: for the first time since 1994, the party lost the Johannesburg, Tshwane and Nelson Mandela Bay metros in the local elections of 2016; there was flagrant – and now publicly exposed – corruption; high unemployment; and poor service delivery. Seizing the moment, ANC President, Cyril Ramaphosa, replaced Zuma on a ticket to address corruption, and led the party to win the national elections.

Since then, a key aspect of government's focus on corruption has been the activity of the Judicial Commission of Inquiry into Allegations of State Capture, headed by Deputy Chief Justice Raymond Zondo (the Zondo Commission of Inquiry). Ironically, and in retrospect perhaps even comically, it was launched by President Zuma as one of his final acts to "investigate allegations of state capture, corruption, fraud and other allegations in the public sector including organs of state".[1]

And although the Inquiry is still ongoing in April 2021, the testimonies to date have revealed a level of corruption, incompetence and maladministration that has shocked even battle-weary South Africans already quite used to banal, bizarre and blatantly dishonest

behaviours from those in power through the years. Indeed, many see ex-President Zuma's refusal to now testify at the commission he launched as his final kick in the teeth to the rule of law; Zuma may yet face a gaol term for this. Time will tell if the impasse of his refusal to appear will be addressed through a legal or political solution. For the purposes of this book, however, it is important to note that Eskom is infamously enjoying centre stage at the Inquiry as a crucial exponent of the machinations of state capture and its devastating consequences to the nation.

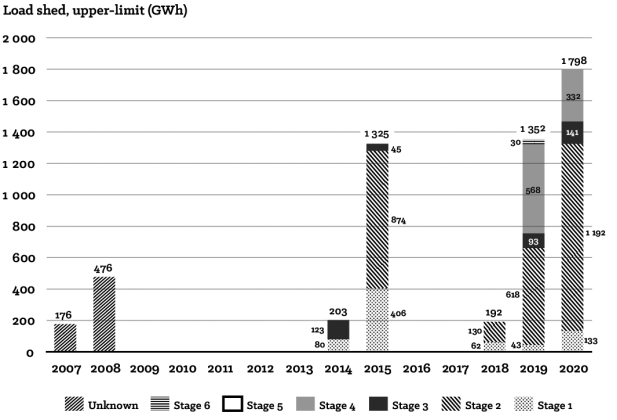
President Ramaphosa had also pledged to reduce the size and cost of his Cabinet when coming into office, which he duly did, by reconfiguring it from 36 to 28 members and merging seven ministries.[2] Here, of particular relevance to our context, is that the Department of Mineral Resources (DMR) was reunited with the DoE to create the Department of Mineral Resources and Energy (DMRE), with Gwede Mantashe, the DMR incumbent, retaining his position at the new ministry. The minister began his political career in the 1980s as branch chairperson for the Matla colliery in the National Union of Mineworkers (NUM), rising to become NUM's secretary general, and moving on to hold the same position for the ANC in the Zuma era. The decision to merge the two ministries and still retain Minister Mantashe is thus inexplicable for two reasons.

Firstly, South Africa's primary energy future had always been almost exclusively coal-based (except for imported petrol – and even here, just under 30% of supply is local coal-to-gas synthetic fuel). And while in this paradigm it may appear sensible to have the two portfolios in one ministry, South Africa however is a signatory to the Paris Agreement. It recognises that to meet its obligations it must drastically reduce and phase out coal entirely; this naturally creates unhealthy internal conflict within a single ministry.

Secondly, even if one notes that other factors, such as a political compromise to maintain the fragile balance within the National Executive Committee may have informed the president's decision to merge the two ministries, the selection of a "mining man" as minister to orchestrate and oversee the energy transition appears counterintuitive. It runs the risk of at best delaying such transition (as has already transpired) and at worst derailing it – with dire long-term consequences for the economy, the natural environment and the health of South Africans who reside in coal regions, whose air and water supplies are already besmirched by ongoing coal-mining activity.

As for the issue of secure energy provision, the reality in early 2021 is that the electricity supply crisis is getting worse, not better. Indeed,

the Energy Centre of the Council for Scientific and Industrial Research (CSIR) reported that 2019 was the worst year of power outages since 2007. In 2019, blackouts persisted for a total of 1 352 GWh – or 530 hours, as shown in Figure iv. It was also the first time that Stage 6 load-shedding was implemented – a level at which over one-third of Eskom's total capacity was offline.



Year	Duration of outages (hours)	Energy shed (GWh)
2007	-	176
2008	-	476
....	....	....
2014	121	203
2015	852	1 325
2016	-	-
2017	-	-
2018	127	192
2019	530	1 352
2020	859	1 798

Figure iv: Annual Load-Shedding for the Period 2007 to 2020 (GWh and Duration)

Source: *CSIR (2021)*[3]

ESI Reform

Notwithstanding the grim state of the country's electricity system, no meaningful reform has been forthcoming from the DMRE; while its procurement of additional electricity from renewables at times almost seems reluctant. How else does one explain that electricity outages started again in 2018, but it was only on 21 February 2020 that the DMRE acted? After two years of inaction, they finally issued two ministerial determinations for new generation capacity. The one was for 2 GW of "emergency power" in a process meant to be fast-tracked; and the other was for ~12 GW from various energy sources. However, the preferred bidders for the supposedly fast-tracked emergency power process were only announced more than 12 months later (in March 2021), with many critics pointing to a skewed request-for-proposal document which favoured liquified gas, resulting in the bulk being allocated by the DMRE minister to Karpowership.[4] A highly controversial decision which may be challenged, further exacerbating electricity supply shortages; while the bidding documents for the second allocation are yet to be released by the IPP office. Recognising

that it is not solely the DMRE who oversees the process, the general lack of pace does however raise concerns about government's level of urgency.

Consequently, private consumers are no longer waiting for government to act, and it is estimated that more than 2 GW of unregistered[5] photovoltaics for own use had been installed nationally by February 2020.[6] This is likely to intensify the income crisis for local government and Eskom, thus hastening the death spiral for both.

Simultaneously, municipalities remain unable to get any of their generation applications approved. A key example is the City of Cape Town. In 2015, the mayor of the city submitted an application for a 300 MW generation licence, but was advised by NERSA that a licence could not be issued without a ministerial determination. This unfortunately also coincided with the final period of the Zuma presidency, during which turmoil reigned and there were frequent ministerial reshuffles. And while the city made numerous attempts to engage with each of the subsequent ministers, it never received a response or an acknowledgement. This inability to enter into any reasonable dialogue triggered inevitable court action, and the matter found its way to the High Court, attracting significant media coverage and interest.

At the time, power outages were a daily occurrence, and President Ramaphosa had taken charge – thus increasing expectations of actions being taken – and things were looking promising when, in his State of the Nation Address on 13 February 2020, the president announced: "We are taking … measures to rapidly and significantly increase generation capacity outside of Eskom … We will also put in place measures to enable municipalities in good financial standing to procure their own power from IPPs."

On 14 May 2020, the City of Cape Town, NERSA and the DMRE presented their arguments to the High Court judge. On 12 August 2020, the ruling was announced. This favoured the DMRE, on the basis that Section 41(3) of the Constitution states that for intergovernmental disputes, those involved "must make every reasonable effort to settle the dispute by means of mechanisms and procedures provided for that purpose, and must exhaust all other remedies before [approaching] a court to resolve the dispute".[7]

In October 2020, the DMRE then gazetted amendments[8] to the electricity regulations for new electricity generation capacity – now opening the way for "municipalities in good financial standing to develop their own power generation projects". The amendments still require ministerial approval, together with other requirements, which

include a feasibility study and proof of compliance with, amongst others, existing regulations, the IRP (DMRE national electricity plan) and municipalities' IDPs. The amendments also impose new and unique obligations, which are additional to what is required under the REIPPPP, thus raising questions about their constitutionality. Moreover, no detail is provided on how the applications will be evaluated in relation to the IRP, how the applicants will be consulted, the maximum timeframe for an application to be processed, or whether any recourse is available for unsuccessful applications. Thus, the amendments are at odds with the policy direction given by the president, and if this is not corrected, it is likely that the matter will find its way back to the courts.

Eskom

Leadership changes were also made at Eskom during this period. Respected CEO, Phakamani Hadebe, left the utility in May 2019 after 12 months at the helm. Largely seen as a victim of circumstance, where the nature of South African politics did not allow him to make the deep changes needed to stabilise the utility, he resigned.[9] André de Ruyter then took the helm in January 2020, and his tenure to date can be characterised as measured, while gradually yielding results. Generation plant managers are now being held accountable for performance (unheard of in the recent past); more than 5 000 employees have been referred for financial irregularities[10] and internal corrupt practices; hundreds of employees have left the utility to avoid internal investigations; and a civil suit for R3.8 billion has been initiated against former employees.[11]

Simultaneously, the utility is in the process of restructuring, or "divisionalisation" in the CEO's terminology. This will see the vertical separation of its three core businesses, as it is split into distinct units (Generation, Transmission, and Distribution) in line with the president's directive. This formal separation will facilitate the creation of the establishment of a standalone Independent Transmission Grid System and Market Operator (ITSMO)[12] – a key development, as this will reconfigure the process of buying and selling and most importantly create a new "energy landscape" for municipalities, especially if REDs is back on the agenda. This structural change coincides with the realisation that coal is not the future; there is a set target to decarbonise by 2050. However, major challenges remain – not least of which is the utility's unsustainable ballooning debt of R464 billion – thus necessitating an unpopular 15% tariff increase that will hasten the death

spiral. Indeed, Eskom's parent ministry announced on 13 February 2019 that the utility was technically bankrupt.[13]

Eskom's final state is anyone's guess in 2021, but it appears to have a steady pair of hands at the helm.

Municipalities

As explained in Chapter 5, municipal revenues initially increased when Eskom started raising electricity tariffs, but these then subsequently fell. This has been reconfirmed by recent analysis, as expressed in an article by Dr Neva Makgetla:

> As a group, municipal income from electricity after paying Eskom climbed 20% from 2009 to 2015, but then fell 3% through 2019 before crashing 40% in the year to June 2020 as the pandemic hit. In eThekwini from 2010 to 2019 businesses cut their electricity use by 6%.[14]

In another article, Dr Makgetla details the dire economic state of the municipalities not able to pay Eskom for the electricity supplied. It has less to do with their consumers not wanting to pay, and more with users' inability to pay:

> According to Quantec estimates, the economies of the five most indebted cities have shrunk 0.6% over the past five years, while their population has grown 4.5%. In the same period the national economy expanded 4.1%, and SA's population by 7.7%.[15]

In Johannesburg, CP is in an even more precarious state than it was in, in 2017. Several CEOs have come and gone, and the city's mayor, Herman Mashaba, resigned on 21 October 2019, ostensibly leaving more problems than he had inherited. His grandstanding on how he would clean up the finances of the city and root out corruption may have amounted to little more than rhetoric – with CP's finances "in a shambles",[16] according to the new mayor, Geoff Makhubo. There was only a 90% collection rate in 2019, against a target of 94%, and the problems with the billing system have worsened;[17] there is the added pressure of a R5.6 billion overdraft;[18] and non-technical losses peaked at 35.80% in Quarter 3 of 2020, a significant increase from 2017 (see Table ii). CP's audited annual financial statement for the year ended 30 June 2020 attributes the declining financial performance to lower gross margin percentage and declining revenue figures largely from non-technical losses (billing errors, illegal connections, and theft).[19]

Table ii: City Power Financial Performance, June 2020 to December 2020

	Bank overdraft	Technical and non-technical losses	Net loss
30 June 2020 (Annual)	R3.8 billion	28.42%	R69.7 million
30 September 2020 (Q1)	R5.6 billion	35.80%	R889 million
31 December 2020 (Q2)	R5.6 billion	27.26%	R706 million

On a more positive note, CP employed an Eskom veteran, with over 30 years of experience, as its new CEO from 1 April 2021. It is hoped that he is given the time and support needed to restore the utility.

Concluding Comment

The unwelcome return of power outages has once again thrust the spotlight on Eskom. And as has been custom for over a century, municipalities remain the poor cousin, with their plight not getting the required attention. It is difficult to see how long this can be sustained for. A CP spokesperson stated on 19 October 2020 that they are "losing about R2-billion annually, which includes vandalism and infrastructure",[20] and that shockingly, many of these acts are being committed by former employees. The cow that delivered so much for so long, is now a financial burden on the city, and if this continues, it can only be a matter of time before provincial or national government will be forced to intervene. Of course, a new and growing contributor to revenue loss is reduced consumption due to embedded generation. The death spiral for CP now seems real, and is now recognised by local governance ratings agency Ratings Afrika.[21] The agency's Municipal Financial Sustainability Index scores (out of 100) (see Table iii) measure six municipal financial components:

1. Operating performance;
2. Liquidity management;
3. Debt governance;
4. Budget practices;
5. Affordability; and
6. Infrastructure development.

Table iii: Declining Performance – Average Municipal Financial Sustainability Index Scores (2016–2020)

Province	2016	2017	2018	2019	2020
Eastern Cape	32	29	26	26	25
Free State	23	21	19	19	17
Gauteng	32	30	31	31	32
KwaZulu-Natal	47	46	44	41	39
Limpopo	39	38	28	32	35
Mpumalanga	29	29	30	29	27
Northern Cape	45	39	34	33	33
North West	27	22	25	22	21
Western Cape	52	55	54	55	53
Average for local municipalities	**39**	**38**	**36**	**36**	**35**
Average for metro municipalities	**50**	**47**	**49**	**47**	**43**

Source: *Ratings Afrika*

It need not be that dire though, and one hopes the national government will recognise the urgency of the situation and introduce the necessary reforms.

Ultimately, the dysfunctional duet between Eskom and municipalities that has often been driven by limited national government action, must now be resolved. And it is complicated further by Eskom's abovementioned divisionalisation reform and the proliferation of poorly controlled own-use generation, which undermines the current municipal funding model.

Notes

1. See https://dpe.gov.za/in-the-judicial-commission-of-inquiry-into-allegations-of-state-capture-corruption-and-fraud-in-the-public-sector-including-organs-of-state/ (accessed 26 April 2021).
2. See https://www.dailymaverick.co.za/article/2019-05-29-ramaphosa-cuts-cabinet-from-36-to-28-ministers-half-of-whom-are-women/ (accessed 26 April 2021).
3. See https://researchspace.csir.co.za/dspace/handle/10204/11865 (accessed 27 April 2021).
4. Powerships are barge- or ship-mounted floating power plants.

Karpowership Powerships are all-in-cost, fast-track solutions that can operate on heavy fuel oil and natural gas.

5. On 10 December 2017, the minister of energy amended the Electricity Regulation Act of 2006 so that all generation systems installed solely for own use are exempted from needing a licence, but it is a requirement (punishable by a fine) that they are registered with NERSA.
6. This was revealed at an electricity workshop held on 10 February 2020 in a discussion between Eskom and the South African Photovoltaic Industry Association.
7. See http://www.energy.gov.za/files/media/pr/2020/MediaStatement-DMRE-welcomes-High-Court-Order-12082020.pdf (accessed 26 April 2021). Also see https://www.polity.org.za/article/electricity-regulations-amended-to-allow-municipalities-to-develop-or-buy-power-2020-10-16 (accessed 1 June 2021).
8. See Government Notice No. 1093 http://www.energy.gov.za/files/media/pr/2020/DMRE-publishes-Amendments-to-Electricity-Regulations-on-New-Generation-Capacity-16102020.pdf and https://www.engineeringnews.co.za/article/electricity-regulations-amended-to-allow-municipalities-to-develop-or-buy-power-2020-10-16 (accessed 26 April 2021).
9. See https://www.dailymaverick.co.za/opinionista/2019-05-30-why-eskom-ceo-phakamani-hadebe-resigned/ (accessed 26 April 2021).
10. See https://pmg.org.za/committee-meeting/31197/ (accessed 26 April 2021).
11. See https://www.news24.com/fin24/economy/eskom/weve-said-goodbye-to-hundreds-eskoms-de-ruyter-on-corruption-clean-up-20201204 (accessed 26 April 2021).
12. See https://www.biznews.com/entrepreneur/2020/10/21/eskom-unbundling (accessed 26 April 2021).
13. See https://www.sabcnews.com/sabcnews/eskom-is-technically-insolvent/ (accessed 26 April 2021).
14. See https://www.businesslive.co.za/bd/opinion/columnists/2021-02-22-neva-makgetla-its-easy-to-blame-eskom-but-what-about-local-government/ (accessed 26 April 2021).
15. See https://www.businesslive.co.za/bd/opinion/columnists/2020-11-09-neva-makgetla-eskom-punishes-without-understanding-why-municipalities-cant-pay/ (accessed 26 April 2021).
16. See https://www.power987.co.za/news/city-of-joburgs-finances-are-in-shambles-geoff-makhubo/ (accessed 26 April 2021).
17. See https://www.businesslive.co.za/bd/national/2021-04-19-joburgs-beleaguered-billing-system-still-in-disarray-r70m-later/ (accessed 26 April 2021).
18. *City Power Quarterly Report 2021*, https://www.citypower.co.za/city-power/Annual Reports/2020_2021_Q1_Report.pdf (accessed 26 April 2021).

19. *City Power 2019/2020 Integrated Annual Report*, see https://www.citypower.co.za/city-power/Pages/Annual-Reports.aspx (accessed 26 April 2021).
20. See https://www.enca.com/news/city-power-losing-billions-due-theft-vandalism (accessed 26 April 2021).
21. See https://bit.ly/3dTg2cm (accessed 26 April 2021).

REFERENCES

ACEA, 2016. "ACEA Shareholding Structure". Available at: http://www.acea.it/ViewCategory.aspx?lang=en&catid=27bd8fef879a4e88a4871f5947a33410#.VzxI2-T977A [Accessed 18 May 2016].

Addleson, M., 1990. "Decentralisation Incentives, Industrialists Plans and the Location of Manufacturing Activity". *South African Journal of Economics*, 58(2), pp.102–109.

Agrawal, A. & Ribot, J., 1999. "Accountability in Decentralization: A Framework with South Asian and West African Cases". *The Journal of Developing Areas*, 33(4), pp.473–502.

AGSA (Auditor General of South Africa), 2016. "Auditor General Media Release on Local Government Audit Results". AGSA. Available at: https://bit.ly/2Z60BFh [Accessed 11 February 2021].

Alao, D.O., Osakede, K.O. & Owolabi, T.Y., 2015. "Challenges of Local Government Administration in Nigeria: Lessons from Comparative Analysis". *International Journal of Development and Economic Sustainability*, 3(4), pp.61–79.

Alexander, P., 2010. "Rebellion of the Poor: South Africa's Service Delivery Protests". *Review of African Political Economy*, 37(123), pp.25–40.

Allix, M., 2014. "BHP Billiton Smelter Discount has Cost Eskom R11.5bn". *Business Day*. Available at: http://www.bdlive.co.za/business/mining/2014/08/01/bhp-billiton-smelter-discount-has-cost-eskom-r11.5bn [Accessed 13 September 2016].

Amen, M., Archer, K. & Bosman, M. (eds), 2006. *Relocating Global Cities: From the Center to the Margins* (Rowman & Littlefield).

AMEU (Association of Municipal Electricity Undertakings), 1937. "A Review of the Policy of Rate Relief from Municipal Electricity Undertakings

Funds". In *Proceedings of the Association of Municipal Electricity Undertakings Fifteenth Convention* (AMEU).
AMEU, 1939. "Relief of Rates". In *Proceedings of the Association of Municipal Electricity Undertakings Seventeenth Convention* (AMEU), pp.63–66.
AMEU, 1945. "Regulation of Profits and Relief of Rates". In *Proceedings of the Association of Municipal Electricity Undertakings Nineteenth Convention* (AMEU), pp.178–186.
AMEU, 1946. "Use of Profits for Relief of Rates". In *Proceedings of the Association of Municipal Electricity Undertakings Twentieth Convention* (AMEU), pp.101–105.
AMEU, 1950–1960. Meeting Minutes.
AMEU, 1989. Extraordinary AMEU Executive Council Meeting Minutes.
AMEU, 1992. "Report on First National Electrification Forum Meeting".
AMEU, 1995. *The History of the Association of Municipal Electricity Undertakings (Southern Africa) 1915–1995*.
Archer, S., 1989. "Industrial Protection and Employment Creation in South Africa During the Inter-War Years". *South African Journal of Economic History*, 4(2), pp.5–24.
Arthur, W.B., 1989. "Competing Technologies, Increasing Returns, and Lock-In by Historical Events". *The Economic Journal*, 99(394), pp.116–131.
Ashe, B., 2002. "Eskom: Corporate Powerhouse or Green Company?". Global Policy Forum. Available at: https://www.globalpolicy.org/component/content/article/225/32173.html [Accessed 4 September 2017].
Baasch, R.J., n.d. "Eskom Tariff History (1973–1991)". Eskom. Available at: http://www.eskom.co.za/CustomerCare/TariffsAndCharges/Documents/Eskom_tariff_history_73-91.pdf [Accessed 15 February 2021].
Bahl, R.W. & Linn, J.F., 1992. *Urban Public Finance in Developing Countries* (World Bank Publications).
Bahl, R. & Smoke, P. (eds), 2003a. *Restructuring Local Government Finance in Developing Countries: Lessons from South Africa* (Edward Elgar).
Bahl, R. & Smoke, P., 2003b. "Overview of Fiscal Decentralization in South Africa". In *Restructuring Local Government Finance in Developing Countries: Lessons from South Africa* (Edward Elgar), eds Bahl, R. & Smoke, P., pp.1–22.
Barchiesi, F., 2011. *Precarious Liberation: Workers, the State, and Contested Social Citizenship in Post-Apartheid South Africa* (SUNY Press).
Baumgartner, F.R. & Jones, B.D. (eds), 2002. *Policy Dynamics* (University of Chicago Press).
Beattie, A., 2009. *False Economy: A Surprising Economic History of the World* (Penguin).
Bekker, B.E.A.G.T. & Marquard, A., 2008. "South Africa's Rapid Electrification

Programme: Policy, Institutional, Planning, Financing and Technical Innovations". *Energy Policy*, 36(8), pp.3125–3137.
Bekker, S.L.G. & Jeffrey, A., 1989. *Local Government in Urban South Africa: A Normative Approach* (Centre for Applied Social Sciences, University of Natal).
Bell, R.T., 1975. "Productivity and Foreign Trade in South African Development Strategy". *South African Journal of Economics*, 43(4), pp.287–310.
Bell, T., 2006. "GEAR was a Reversal of RDP; ASGISA is More of the Same". *Business Report*, 10.
Benedettini, S., Pontoni, F. & Others, 2013. "Italian Regulation of Electricity Distribution and its Impact on Efficiency, Investments and Innovation: A Qualitative Assessment". *Competition and Regulation in Network Industries*, 14(4), pp.365–385.
Bernstein, A., 1998. *Response to the White Paper (on Local Government) by the Centre for Development and Enterprise* (Taylor & Francis Online).
Bezuidenhout, A., Bischoff, C., Buhlungu, S. & Lewins, K., 2008. *Tracking Progress on the Implementation and Impact of the Employment Equity Act Since its Inception* (South African Department of Labour).
Bhorat, H., 2001. *Fighting Poverty: Labour Markets and Inequality in South Africa* (Juta and Company Ltd).
Bird, R.M., 2000. "Subnational Revenues: Realities and Prospects". In *Proceedings of Decentralization and Accountability of the Public Sector* (World Bank Publications). Annual World Bank Conference on Development in Latin America and the Caribbean, Washington, DC, 20–22 June 1999, pp. 319–336.
Bird, R.M., 2001. "Setting the Stage: Municipal and Intergovernmental Finance". In *The Challenge of Urban Government: Policies and Practices* (World Bank Publications), eds Freire, M. & Stren, R., pp.113–128.
Bird, R.M., 2011. "Subnational Taxation in Developing Countries: A Review of the Literature". *Journal of International Commerce, Economics and Policy*, 2(1), pp.139–161.
Blair, H., 2000. "Participation and Accountability at the Periphery: Democratic Local Governance in Six Countries". *World Development*, 28(1), pp.21–39.
Blom-Hansen, J., Borge, L. & Dahlberg, M., 2010. "Local Government in Denmark, Norway and Sweden". In *Local Public Sector in Transition: A Nordic Perspective* (Government Institute for Economic Research), ed Moisio, A. Available at: http://www.vatt.fi/file/vatt_publication_pdf/j56.pdf [Accessed 18 March 2013].
Bonner, P., Delius, P. & Posel, D. (eds), 1993. *Apartheid's Genesis, 1935–1962* (Ravan Press of South Africa).
Borchers, M., Qase, N., Gaunt, T., Mavhungu, J., Winkler, H., Afrane-Okese, Y.

& Thom, C., 2001. *National Electrification Programme Evaluation: Summary Report* (Energy and Development Research Centre, University of Cape Town). Commissioned by the Department of Minerals and Energy and the Development Bank of Southern Africa.
Borckenhagen, C.L.F., 1964. *Committee of Inquiry into the Financial Relations Between the Central Government, Provinces and Local Authorities*.
Botes, P.J., 1989. "*Quo Vadis* – AMEU". Association of Municipal Electricity Undertakings (AMEU).
Bottomley, J., 1993. "The Application of the Theory of 'Economic Backwardness' to South Africa 1881–1924". *South African Journal of Economic History*, 8(2), pp.1–23.
Boyle, R., 2012. *Using Fees and Charges – Cost Recovery in Local Government* (Institute of Public Administration). Available at: https://www.ipa.ie/pdf/LocalGov_RS_No3.pdf [Accessed 7 January 2017].
Brock, J., 2016. "ANC Shaken to Core as South African Voters Look Beyond Race". Reuters. Available at: http://www.reuters.com/article/us-safrica-election-race-analysis-idUSKCN10G1BJ [Accessed 10 February 2021].
Browne, G.W., 1980. *Report of the Committee of Inquiry into the Finances of Local Authorities in South Africa* (Government of the Republic of South Africa).
Browne, G., 1983. "Fifty Years of Public Finance". *South African Journal of Economics*, 51(1), pp.134–173.
Busnello, L., 2014. *Evolution of the Italian Power Sector After its Liberalisation* (Master's thesis, University of Padova).
Bye, T. & Hope, E., 2005. "Deregulation of Electricity Markets: The Norwegian Experience". *Economic and Political Weekly*, pp.5269–5278.
Cameron, R., 1993. "Regional Services Councils in South Africa: Past, Present and Future". *Public Administration*, 71(3), pp.417–439.
Cameron, R., 1995. "The History of Devolution of Powers to Local Authorities in South Africa: The Shifting Sands of State Control". *Local Government Studies*, 21(3), pp.396–417.
Cameron, R., 1996. "The Democratisation of South African Local Government". *Local Government Studies*, 22(1), pp.19–39.
Cameron, R., 1997. "South Africa's Final Constitution: The Elevation of Local Government".
Cameron, R., 1999. *The Democratisation of South African Local Government: A Tale of Three Cities* (Van Schaik Publishers).
Cameron, R., 2002. "Central-Local Financial Relations in South Africa". *Local Government Studies*, 28(3), pp.113–134.
Carmody, P., 2002. "Between Globalisation and (Post) Apartheid: The Political Economy of Restructuring in South Africa". *Journal of Southern African Studies*, 28(2), pp.255–275.
Cartwright, A.P., 1971. *1940–1970, 30 Years On: The Story of the Founding and*

Growth of the Industrial Development Corporation of South Africa Limited (Hortors Printers).
CDE (Centre for Development and Enterprise), 2008. "South Africa's Electricity Crisis: How Did We Get Here? How Do We Get things Right?". Available at: https://www.cde.org.za/south-africas-electricity-crisis-how-did-we-get-here-and-how-do-we-put-things-right/ [Accessed 15 February 2021].
Chalmers, R., 2001. "Eskom's Generation Division Gets New Look". *Business Day*, 3 April 2001.
Chettiar, M., Lakmeeharan, K. & Koch, R., 2009. "Review of the January 2008 Electricity Crisis". EE Publishers. Available at: http://www.ee.co.za/wp-content/uploads/legacy/Energize_Oct09/01_GT_Review.pdf [Accessed 15 February 2021].
Christie, R., 1984. *Electricity, Industry and Class in South Africa* (SUNY Press).
Christopher, A.J., 1997. "Racial Land Zoning in Urban South Africa". *Land Use Policy*, 14(4), pp.311–323.
City of Cape Town, 2015. *City of Cape Town Integrated Annual Report 2014/15.*
Clark, G.L. & Dear, M.J., 1984. *State Apparatus: Structures and Language of Legitimacy* (Allen & Unwin).
Clark, N.L., 1994. *Manufacturing Apartheid: State Corporations in South Africa* (Yale University Press).
Cloete, J.J.N., 1978. *Provincial and Municipal Government and Administration: Selected Readings* (Van Schaik Publishers).
Cockburn, C., 1977. "The Local State: Management of Cities and People". *Race & Class*, 18(4), pp.363–376.
Coetzee, N.G., 2010. *Restructuring of the South African Electricity Distribution Industry (EDI)* (University of the Witwatersrand).
Conradie, S.R. & Messerschmidt, L., 2000. *A Symphony of Power: The Eskom Story* (Chris van Rensburg Publications).
Constitution of the Republic of South Africa, 1996. Available at: https://www.gov.za/documents/constitution-republic-south-africa-1996 [Accessed 10 February 2021].
Covary, T., 2020. *A Historical Institutionalist Analysis of the Evolution of South Africa's Municipal Electricity Sector Within the Broader Electricity Supply Industry* (Doctoral thesis, University of Cape Town).
Cowden, J. & Holmes, I.Q., 1969. *Holmes' Local Government Finance in South Africa* (Butterworths).
CP (City Power), 2012. *City Power Johannesburg: Draft Business Plan 2012–2016.*
CP, 2016. *City Power Johannesburg: Updated Business Plan 2016–2021.*
Craythorne, D.L., 1982. *Metropolitan Municipal Government for Greater Cape Town* (Doctoral thesis, University of Cape Town).

Crookes, R., 2015. "Medupi Power Station Bringing Relief". Eskom Presentation.
Dafflon, B., 2002. *Local Public Finance in Europe: Balancing the Budget and Controlling Debt* (Edward Elgar).
Davies, R. & Van Seventer, D.E., 2006. *An Economy-Wide Impact Assessment of the Economic Infrastructure Investment Component of the Accelerated & Shared Growth Initiative (ASGISA)*.
Dear, M., 1981. "A Theory of the Local State". In *Political Studies from Spatial Perspectives: Anglo-American Essays on Political Geography* (John Wiley and Sons Ltd), eds Burnett, A.D. & Taylor, P.J., pp.183–200.
De Beer, W. & Waters, N., 2011. *EDI Restructuring: The Legacy, the Lessons and the Future* (Association of Municipal Electricity Undertakings [AMEU]).
Dehmel, C., 2011. "Progressive Electricity Tariffs in Italy and California – Prospects and Limitations on Electricity Savings of Domestic Customers". European Council for an Energy Efficient Economy (ECEEE) Summer Study, France.
Deloitte Consulting, 2012. *Local Government: Achieving the Elusive Dream of Sustainable Turnaround and Clean Audit*.
Dewees, D.N., 2002. "Pricing Municipal Services: The Economics of User Fees". *Canadian Tax Journal*, 50(2), pp.586–599.
Di Liddo, G., Longobardi, E. & Porcelli, F., 2014. *Measuring Horizontal Fiscal Imbalances: The Case of Italian Municipalities* (Taylor & Francis).
DME (Department of Minerals and Energy), 2001. *Electricity Distribution Industry: Restructuring Blueprint Report* (Government of the Republic of South Africa).
DME, 2002. *Co-operative Agreement Pertaining to the Restructuring of the Electricity Distribution Industry in South Africa, Final Draft* (Government of the Republic of South Africa).
DoE (Department of Energy), 2017. *State of Renewable Energy in South Africa*. Available at: http://www.energy.gov.za/files/media/Pub/2017-State-of-Renewable-Energy-in-South-Africa.pdf [Accessed 26 April 2021].
Duff, D., 2004. "Benefit Taxes and User Fees in Theory and Practice". *University of Toronto Law Journal*, 54(4), pp.391–447.
Eberhard, A., 2000. *Competition and Regulation in the Electricity Supply Industry in South Africa* (Citeseer).
Eberhard, A., 2005a. "Economic Regulation of the Regional Electricity Distributors: Critical Challenges". University of Cape Town Graduate School of Business. Available at: http://www.gsb.uct.ac.za/files/Eberhard-DBSARegulationofREDs.pdf [Accessed 16 November 2016].
Eberhard, A., 2005b. "From State to Market and Back Again: South Africa's Power Sector Reforms". *Economic and Political Weekly*, December 2005.

Eberhard, A., 2007a. "Rosier Future Without the REDs". Available at: https://anyflip.com/ebig/jajo/basic [Accessed 12 February 2021].
Eberhard, A., 2007b. *The Political Economy of Power Sector Reform in South Africa* (Cambridge University Press).
Eberhard, A., 2013a. "Briefing on the Approach to Distribution Asset Management (ADAM) Pilot Project". Available at: www.slideplayer.com/slide/9118263/ [Accessed 7 October 2017].
Eberhard, A., 2013b. "Overview of the Restructuring of the South African Electricity Distribution Industry (EDI)". South African Local Government Association (SALGA).
Eberhard, A., 2013c. "Towards a Secure, Competitively Priced and Environmentally Sustainable Electricity Future". Electricity Supply Conference. Available at: http://www.fossilfuel.co.za/conferences/2013/electricityConference/Session-A/Anton-Eberhard.pdf [Accessed 10 November 2016].
Eberhard, A. & Naude, R., 2017. *The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned & Proposals to Reduce Transaction Costs* (University of Cape Town). Available at: https://www.gsb.uct.ac.za/files/EberhardNaude_REIPPPPReview_2017_1_1.pdf [Accessed 26 April 2021].
Eberhard, R., 2015. *Understanding Electricity Demand Patterns in South Africa's Cities: Briefing Paper 1.*
Ellwood, S., 1998. "Special Issue on Local Governance". In *Local Governance* (Edward Elgar), ed Coulson, A., pp.263–274.
Elson, P.R., 2008. *A Historical Institutional Analysis of Voluntary Sector/Government Relations in Canada* (Doctoral thesis, University of Toronto).
Eskom, n.d. "Escom 1950–1959 – The Years of Growth – 'The Wonder Years'". Available at: http://www.eskom.co.za/sites/heritage/Pages/1950.aspx [Accessed 25 August 2016].
Eskom, 2009. "Electricity in South Africa – Eskom Heritage". Available at: http://heritage.eskom.co.za/heritage/electricity_in_south_africa.htm [Accessed 22 June 2016].
Eskom, 2016. *Eskom Integrated Results 2016.* Available at: http://www.eskom.co.za/IR2016/Documents/Eskom_integrated_report_2016.pdf [Accessed 30 November 2016].
EU (European Union), 2016. "Local Surcharge on Electricity Duty". Available at: http://ec.europa.eu/taxation_customs/tedb/taxDetail.html?id=347/1357119833&taxType=Other+indirect+tax [Accessed 17 May 2016].
Fanoe, W., 2017. "2017 Division of Revenue Act". Chartered Institute of Government Finance, Audit and Risk Officers (CIGFARO). Available at: http://www.cigfaro.co.za/

DisplayLink.aspx?group=CIGFARO%20Annual%20Conference&name=2017%20Conference%20Presentations [Accessed 20 March 2018].
Fanoe, W. & Kenyon, S., 2015. "Provincial and Local Government Equitable Share Formulas". National Treasury (NT). Available at: https://static.pmg.org.za/150513treasury.pdf [Accessed 23 April 2021].
Farvacque-Vitkovic, C.D. & Kopanyi, M., 2014. *Municipal Finances: A Handbook for Local Governments* (World Bank Publications).
Feinstein, C.H., 2005. *An Economic History of South Africa: Conquest, Discrimination, and Development* (Cambridge University Press).
FFC (Financial and Fiscal Commission), 2011. "Submission to the Select Committee on Finance on the Siyenza Manje Programme". Available at: http://www.ffc.co.za/docman-menu-item/commission-submissions/480-siyenza-manje-final-august-3-2011 [Accessed 13 January 2017].
FFC, 2012. *Local Government Equitable Share Formula Review, Discussion Paper 2.* Available at: http://ffc.co.za/component/search/?searchword=local%20government%20equitable%20share%20formula%20review&searchphrase=all&Itemid=101 [Accessed 3 January 2017].
Fig, D., 2010. "Darkness and Light: Assessing the South African Energy Crisis". In *Development Dilemmas in Post-Apartheid South Africa* (University of KwaZulu-Natal Press), eds Freund, W. & Witt, H., pp. 116–136.
Fine, B. & Rustomjee, Z., 1996. *The Political Economy of South Africa: From Minerals-Energy Complex to Industrialisation* (Taylor & Francis).
Fjeldstad, O., 2004. "What's Trust Got to Do with it? Non-Payment of Service Charges in Local Authorities in South Africa". *The Journal of Modern African Studies*, 42(4), pp.539–562.
Frankel, J. & Sturzenegger, F., 2007. "Policy Brief – South Africa's Macroeconomy".
Fraser, N., 2008. "'Turbine Square is 'Phenomenal'". City of Johannesburg. Available at: http://www.joburg.org.za/index.php?option=com_content&task=view&id=2415&Itemid=58 [Accessed 11 August 2016].
Freire, M. & Stren, R.E. (eds), 2001. *The Challenge of Urban Government: Policies and Practices* (World Bank Publications). Available at: https://bit.ly/3q3SHbi [Accessed 8 February 2021].
Freund, B., 2010. "The Significance of the Minerals-Energy Complex in the Light of South African Economic Historiography". *Transformation: Critical Perspectives on Southern Africa*, 71(1), pp.3–25.
Freund, B., 2018. *Twentieth Century South Africa: A Developmental History* (Cambridge University Press).
Galen, P.S., 1997. *Electricity Distribution Industry Restructuring, Electrification and Competition in South Africa* (National Renewable Energy Laboratory).

Gaunt, C.T., 2008. "Electricity Distribution Industry Restructuring in South Africa: A Case Study". *Energy Policy*, 36(9), pp.3448–3459.
Gelb, S., 2006. "The RDP, GEAR and All that: Reflections Ten Years Later". *Transformation: Critical Perspectives on Southern Africa*, 62(1), pp.1–8.
Gelb, S., 2007. "Macroeconomic Policy in South Africa. From RDP through GEAR to ASGISA". In *At the End of the Rainbow? Social Welfare in the New South Africa* (Africa Contact), eds Gunnarsen, G., Mac Manus, P., Nielsen, M. & Stolten, H.E.
Giles, P.A., 1968. "Association of Municipal Electrical Undertakings of Southern Africa, Proceedings 1968". Association of Municipal Electricity Undertakings (AMEU).
Goldsmith, M. & Page, E. (eds), 1987. *Central and Local Government Relations* (Sage).
Goodwin, M. & Painter, J., 1996. "Local Governance, the Crises of Fordism and the Changing Geographies of Regulation". *Transactions of the Institute of British Geographers*, 21(4), pp.635–648.
Government of Norway, 2008. "Fact 2008 – Energy and Water Resources in Norway". In *Government of Norway.* Available at: https://www.regjeringen.no/globalassets/upload/oed/pdf_filer/faktaheftet/evfakta08/evfacts08_kap05_eng.pdf [Accessed 14 May 2016].
Government of South Africa, 1909. "South Africa Act 1909".
Government of South Africa, 1922. "Electricity Act No. 42 of 1922".
Government of the Republic of South Africa, 1985. "Regional Services Councils Act No. 109 of 1985".
Government of the Republic of South Africa, 2014. "Statement on the Eskom Power Emergency, 6 March 2014". Available at: http://www.dpe.gov.za/newsroom/Pages/Statement-on-the-Eskom-Power-Emergency.aspx [Accessed 4 September 2017].
Government of the United Kingdom, 2004. "Office of the Deputy Prime Minister: Housing, Planning, Local Government and the Regions – Ninth Report". Available at: http://www.publications.parliament.uk/pa/cm200304/cmselect/cmodpm/402/40202.htm [Accessed 24 May 2016].
Government of the United Kingdom, 2017. *Annual Fuel Poverty Statistics Report* (National Statistics). Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/623108/Fuel_Poverty_Statistics_Report_2017.pdf [Accessed 12 August 2017].
Green, A., 2017. "Of the Poll Tax and of Brexit". *Financial Times*. Available at: blogs.ft.com/david-allen-green/2017/06/23/of-the-poll-tax-and-of-brexit/ [Accessed 12 August 2017].
Green, L.P., 1957. "Local Government Finance in South Africa". *Public Administration*, 35(2), p.179.
Habib, A. & Padayachee, V., 2000. "Economic Policy and Power Relations in

South Africa's Transition to Democracy". *World Development*, 28(2), pp.245–263.
Hall, P.A. & Taylor, R.C.R., 1996. "Political Science and the Three New Institutionalisms". *Political Studies*, 44(5), pp.936–957.
Hammond-Tooke, W.D. (ed), 1977. *An Introduction to Local Government* (Witwatersrand University Press).
Hart, D.B.A.L.M. & Demetrius, P., 2000. "Decentralised Electricity". *Financial Times*.
Hausmann, R., 2008. "Final Recommendations of the International Panel on the Accelerated and Shared Growth Initiative for South Africa (Asgisa)". National Treasury (NT). Available at: http://www.treasury.gov.za/publications/other/growth/01-Overall%20Summary%20and%20Final%20Recommendations/01-Final%20Recommendations%20of%20the%20International%20Panel.pdf [Accessed 15 February 2021].
Heller, P., 2001. "Moving the State: The Politics of Democratic Decentralization in Kerala, South Africa, and Pôrto Alegre". *Politics and Society*, 29(1), pp.131–163.
Hetherington, P., 2013. "Councils Generate Own Power to Take On the Big Six Energy Firms". *The Guardian*. Available at: www.theguardian.com/society/2013/dec/04/councils-generate-own-power-big-six-energy-fuel-poverty [Accessed 12 August 2017].
Heymans, C. & Tötemeyer, G. (eds), 1988. *Government by the People? The Politics of Local Government in South Africa* (Juta and Company Ltd).
Holborn, L., 2013. *Education, Entrepreneurship and Economic Growth: The Three Es of Real Empowerment* (South African Institute of Race Relations).
Hood, C., 1995. "Emerging Issues in Public Administration". *Public Administration*, 73(1), pp.165–183.
Hormell, O.C., 1932. "Ownership and Regulation of Electric Utilities in Great Britain". *The Annals of the American Academy of Political and Social Science*, 159(1), pp.128–139.
Horowitz, R.R., 1994. *Apartheid, its Demise and Electricity: The Development of the Institutional and Regulatory Structure of the South African Electricity Industry* (Energy and Development Research Centre, University of Cape Town).
Iannello, C., 2008. "Italian Republic, UCLG country profiles". Available at: http://www.cities-localgovernments.org/gold/Upload/Italy.pdf [Accessed 16 May 2016].
Immergut, E.M., 1998. "The Theoretical Core of the New Institutionalism". *Politics & Society*, 26(1), pp.5–34.
Inglesi, R. & Pouris, A., 2010. "Forecasting Electricity Demand in South Africa: A Critique of Eskom's Projections". *South African Journal of Science*, 106(1–2), pp.50–53.

Inglesi-Lotz, R., 2011. "The Evolution of Price Elasticity of Electricity Demand in South Africa: A Kalman Filter Application". *Energy Policy*, 39(6), pp.3690–3696.
Inglesi-Lotz, R., 2014. "The Sensitivity of the South African Industrial Sector's Electricity Consumption to Electricity Price Fluctuations". *Journal of Energy in Southern Africa*, 25(4), pp.2–10.
Inglesi-Lotz, R. & Pouris, A., 2012. "Energy Efficiency in South Africa: A Decomposition Exercise". *Journal of Energy in South Africa*, 42(1), pp.113–120.
IPP Office, 2016. "IPP Programme: An Overview". Available at: https://www.ipp-projects.co.za/Publications [Accessed 1 December 2016].
Jacobs, A.M., 1941. "The Development of Electrical Power Supply in the Union of South Africa". In *The Transactions of the South African Institute of Electrical Engineers*, 32(8), pp.1–21.
Jaglin, S. & Dubresson, A., 2016. *Eskom: Electricity and Technopolitics in South Africa* (Juta and Company Ltd).
Jahan, S., Mahmud, A.S. & Papageorgiou, C., 2014. "What is Keynesian Economics?". *Finance & Development*, 51(3), pp.53–54. International Monetary Fund. Available at: http://www.imf.org/external/pubs/ft/fandd/2014/09/pdf/basics.pdf [Accessed 8 February 2021].
Janisch, A., 2013. *The Potential Impact of Efficiency Measures and Distributed Generation on Municipal Electricity Revenue: Double Whammies and Death Spiral* (Association of Municipal Electricity Undertakings [AMEU]).
Jenvey, F.E., 1964. "The Local Authorities Committee (Borckenhagen) – A Review". Historical Papers Research Archive, University of the Witwatersrand. Available at: www.historicalpapers.wits.ac.za/index.php?inventory_enhanced/U/Collections&c=227950/R/A1132-C118 [Accessed 19 September 2016].
JEU (Johannesburg Electricity Undertaking), 1966. *Annual Report of the City Manager: Electricity Department, Johannesburg*.
JEU, 1969. *Annual Report of the City Manager: Electricity Department, Johannesburg*.
Johannesburg Municipality, 1992. *Annual Financial Statements: City of Johannesburg 1991/1992*.
Johannesburg Municipality, 1995. *Consolidated Financial Statements: City of Johannesburg*.
John, P., 2013. *The Last Creature Left in the Swamp: The Persistence and Resilience of English Local Government* (University College London).
Johnson, C., 2001. "Local Democracy, Democratic Decentralisation and Rural Development: Theories, Challenges and Options for Policy". *Development Policy Review*, 19(4), pp.521–532.

Johnston, R. & Pattie, C., 1996. "Local Government in Local Governance: The 1994–95 Restructuring of Local Government in England". *International Journal of Urban and Regional Research*, 20(4), pp.671–696.
Jordaan, J. & Dekenah, M., 2013. *Residential Tariff Effects* (Eskom).
Kaplan, D., 2013. *Policy Gridlock? Comparing the Proposals Made in Three Economic Policy Documents*. Centre for Development and Enterprise (CDE) Focus Occasional Paper.
Kessides, I.N., Bogetic, Z. & Maurer, L., 2007. *Current and Forthcoming Issues in the South African Electricity Sector* (World Bank Publications).
Kessides, I., Miniaci, R., Scarpa, C. & Valbonesi, P., 2009. "Toward Defining and Measuring the Affordability of Public Utility Services". In *World Bank Policy Research Working Paper Series, Vol II* (World Bank Publications).
King, A. & Crewe, I., 2014. *The Blunders of Our Governments* (Oneworld Publications).
Knapp, P., 2007. *Path Dependence in Self-Maintaining and Self-Reinforcing Structures*. Available at: http://www.allacademic.com/meta/p182823_index.html [Accessed 10 December 2017].
Kulkarni, P., 2012. *Cases in Management* (IBA Publications).
Laight, J.C., 1955. "Some Thoughts on the Protection of the South African Manufacturing Industry". *South African Journal of Economics*, 23(3), pp.213–222.
Lemon, A., 2002. "The Role of Local Government". In *Democratising Local Government: The South African Experiment* (University of Cape Town Press), eds Parnell, S., Pieterse, E., Swilling, M. & Wooldridge, D., pp.18–30.
Le Roux, M., 2006. "Mbeki: There is no Electricity Crisis". *Mail & Guardian*. Available at: https://mg.co.za/article/2006-03-30-mbeki-there-is-no-electricity-crisis [Accessed 15 March 2017].
Lewis, P., 1987. "Put More into Life than You Expect to Take Out". Historical Papers Research Archive, University of the Witwatersrand. Available at: http://www.historicalpapers.wits.ac.za/inventories/inv_pdfo/A1132/A1132-G2-001-jpeg.pdf [Accessed 19 September 2016].
Litvack, J.I., Ahmad, J. & Bird, R.M., 1998. *Rethinking Decentralization in Developing Countries* (World Bank Publications).
Lodge, T., 2003. *Politics in South Africa: From Mandela to Mbeki* (Indiana University Press).
Lumby, A.B. & Coleman, F.L., 1983. *Economic History of South Africa* (Haum).
Mabugu, R., 2017. "Financial Sustainability in a Flailing Economic Environment through Maximising Revenue Generation Potential of the Revenue Base". Chartered Institute of Government Finance, Audit and Risk Officers (CIGFARO). Available at: http://www.cigfaro.co.za/DisplayLink.aspx?group=CIGFARO%20Annual%20Conference&name=2017%20Conference%20Presentations [Accessed 20 March 2018].

MacKay, H.M., Rogers, K.H. & Roux, D.J., 2003. "Implementing the South African Water Policy: Holding the Vision while Exploring an Uncharted Mountain". *Water SA*, 29(4), pp.353–358.
Maddison, A., 2007. *The World Economy Volume 1: A Millennial Perspective, Volume 2: Historical Statistics* (Academic Foundation).
Mäki, H., 2013. *Municipal Engineers in South Africa Before 1910* (North-West University).
Manor, J., 1999. *The Political Economy of Democratic Decentralization* (World Bank Publications).
Manor, J., 2001. *Local Government in South Africa: Potential Disaster Despite Genuine Promise* (Department for International Development, Government of the United Kingdom).
Manuel, T., 2006. "No Contradictions Between RDP and GEAR". *ANC Today*, 6(31).
March, J.G. & Olsen, J.P., 1989. *Rediscovering Institutions: The Organizational Basis of Politics* (Free Press).
March, J.G. & Olsen, J.P., 1995. *Democratic Governance* (Free Press).
Marquard, A., 2006. *The Origins and Development of South African Energy Policy* (Doctoral thesis, University of Cape Town).
Martinez-Vazquez, J., 2015. *The Challenge of Local Government Financing in Developing Countries* (United Nations Human Settlement Programme).
Mashatisho, D., 2014. *Establishment of the Municipal Managers Institute: Concept Document* (South African Local Government Association [SALGA]). Available at: https://bit.ly/3a7EN2E [Accessed 16 January 2015].
Matebese, Z.L.C.B., 2013. *An Evaluation of the City of Johannesburg's Igoli 2002 Programme from 2003 to 2010* (Master's thesis, Rhodes University).
Maud, S.J.P.R., 1938. *City Government: The Johannesburg Experiment* (Oxford University Press).
Mavhungu, C.M., 2011. *The Non-Payment for Municipal Services in the Vhembe District* (Master's thesis, University of South Africa [UNISA]).
Mawhood, P., 1993. *Local Government in the Third World: The Experience of Tropical Africa, Second Edition* (Wiley Chichester).
Mbeki, T., n.d. "We Salute All South Africans on a Decade of Freedom". *ANC Today*, 4(16).
McCarthy, C.L., 1988. "Structural Development of South African Manufacturing Industry – A Policy Perspective". *South African Journal of Economics*, 56(1), pp.1–15.
McCarthy, T.J., 2011. *The Transformation of Ireland 1958–93: The Role of Ideas in Punctuating Institutional Path Dependency at Critical Junctures* (Doctoral thesis, University College Cork).
McDonald, D.A., 2002. "The Bell Tolls for Thee: Cost Recovery, Cut-Offs, and the Affordability of Municipal Services in South Africa". In *Cost Recovery*

and the Crisis of Service Delivery in South Africa (Zed Press), eds McDonald, D.A. & Pape, J., pp.161–182.
McDonald, D.A., 2009. *Electric Capitalism: Recolonising Africa on the Power Grid* (Routledge).
McRae, I., 2006. *The Test of Leadership: 50 Years in the Electricity Supply Industry of South Africa* (EE Publishing & Productions).
Meenakshisundaram, S., 1994. *Decentralisation in Developing Countries* (Concept Publishing Company).
Mercados, I., 2015. "Study on Tariff Design for Distribution Systems". European Union (EU). Available at: https://ec.europa.eu/energy/sites/ener/files/documents/20150313%20Tariff%20report%20fina_revREF-E.PDF [Accessed 18 May 2016].
Ministry of Finance, 1971. *White Paper on the Reports of the Committee of Inquiry into the Financial Relations Between the Central Government, the Provinces and the Local Authorities* (Government of the Republic of South Africa).
Ministry of Provincial Affairs and Constitutional Development, 1998. *The White Paper on Local Government, 1998* (Government of the Republic of South Africa).
Mlambo-Ngcuka, P., 2004. "Budget Vote Speech by the Minister of Minerals and Energy".
MM (Merz & McLellan Consulting Engineers), 1936. "Charles Merz's Summarised Notes for South African Visit".
MM, 1965. *Report on Post-1964 Generation Requirements* (City of Johannesburg).
MM, 1966. "Notes on Purchase of a Bulk Supply – Part 2". City of Johannesburg.
MM, 1979. *Report on the Power Supply System* (City of Johannesburg).
MM, 1981. *Report on Future Power Generation on Councils System* (City of Johannesburg).
Moak, L.L. & Hillhouse, A.M., 1975. *Concepts and Practices in Local Government Finance* (Municipal Finance Officers Association of the United States and Canada).
Mohammed, S., 1997. "The Energy-Intensive Sector: Considering South Africa's Comparative Advantage in Cheap Electricity". In *Trade and Industrial Policy Strategies Conference, Johannesburg* (Trade and Industrial Policy Strategies [TIPS]).
Montella, C., Martorana, C. & Tedeschi, A., 2014. "Electricity Regulation in Italy: Overview". Available at: http://uk.practicallaw.com/4-525-4301?q=*&qp=&qo=&qe=#a411640 [Accessed 18 May 2016].
Moore, M., 2012. "Funding Options: Electricity Indaba". Available at: http://www.energy.gov.za/files/events_overviewINEP.html [Accessed 11 February 2021].

More, T.A., 1999. "A Functionalist Approach to User Fees". *Journal of Leisure Research*, 31(3), p.227.
Mountain, B., 1994. *Towards a Pricing Strategy for the South African Electricity Supply and Distribution Industry* (Master's thesis, University of Cape Town).
Murray, M.J., 2011. *City of Extremes: The Spatial Politics of Johannesburg* (Duke University Press).
Murray, M.J., 2014. "The Role of Local Government in a Modern State". Available at: www.classonline.org.uk [Accessed 23 May 2016].
Naki, E., 2016. "SALGA Calls for Review of Funding for Municipalities". *The Citizen*. Available at: https://citizen.co.za/news/south-africa/1363963/salga-calls-review-funding-municipalities/ [Accessed 22 March 2018].
Nattrass, J., 1981. *The South African Economy: Its Growth and Change* (Oxford University Press).
Nattrass, J., 1988. *The South African Economy: Its Growth and Change, Second Edition* (Oxford University Press).
Nattrass, N., 1991. "Controversies about Capitalism and Apartheid in South Africa: An Economic Perspective". *Journal of Southern African Studies*, 17(4), pp.654–677.
Nattrass, N., 1994a. "Economic Restructuring in South Africa: The Debate Continues". *Journal of Southern African Studies*, 20(4), pp.517–531.
Nattrass, N., 1994b. "Politics and Economics in ANC Economic Policy". *African Affairs*, 93(372), pp.343–359.
Nattrass, N., 2008. *Five Million Jobs: How to Add Five Million New Jobs to the South African Economy Over the Next Five Years* (Centre for Development and Enterprise).
Nattrass, N. & Seekings, J., 2015. *Should and Can Labour-Surplus, Middle-Income Economies Pursue Labour-Intensive Growth? The South African Challenge* (Working paper, University of Cape Town).
Nleya, N., 2011. "Linking Service Delivery and Protest in South Africa: An Exploration of Evidence from Khayelitsha". *Africanus*, 41(1), pp.3–13.
Nordic Energy Regulators, 2011. *Economic Regulation of Electricity Grids in Nordic Countries* (Nordic Energy Regulators [NordREG]).
North, D.C., 1990. *Institutions, Institutional Change and Economic Performance* (Cambridge University Press).
NT (National Treasury), 2001. *Intergovernmental Fiscal Review* (Government of the Republic of South Africa).
NT, 2004. *Budget Review 2004* (Government of the Republic of South Africa).
NT, 2007. *Budget Review 2007* (Government of the Republic of South Africa).
NT, 2011. *Local Government Budgets and Expenditure Review 2006/7–2012/13* (Government of the Republic of South Africa).
NT, 2014. *Budget Review 2014* (Government of the Republic of South Africa).
NT, 2016a. *Budget Review 2016* (Government of the Republic of South Africa).

NT, 2016b. *Local Government Revenue and Expenditure* (Government of the Republic of South Africa). Available at: http://www.gov.za/sites/www.gov.za/files/speech_docs/3rd%20Q%20S71%20Publication.pdf [Accessed 23 November 2016].
NT, 2017. "Explanatory Memorandum of the Division of Revenue". In *Annexure to the 2017 Budget Review* (Government of the Republic of South Africa).
Nzimande, P., 2008. "Policy and Regulatory Considerations – Getting it Right". EDI Holdings, Government of the Republic of South Africa.
Pagliano, L., 2004. "The Restructuring of the Italian Electricity Sector: Proposals for the Inclusion of Objectives for Increased Energy Efficiency and Renewables Exploitation". In *Eucalyptus: Enduring Myths, Stunning Realities* (Discovery Publishing House), eds Abbasi, S.A., Ramesh, N. & Vinithan, S., p.349.
Peters, S., 2012. "Municipal Consumer Debt in South Africa". Financial Fiscal Commission (FFC). Available at: http://ffc.co.za/reports/chapters [Accessed 16 February 2021].
Pickering, M., 2010. *Towards an Independent System Operator for South Africa* (Energy Research Centre, University of Cape Town).
Pierson, P., 2000. "Increasing Returns, Path Dependence, and the Study of Politics". *American Political Science Review*, 94(2), pp.251–267.
Piperno, S., 2000. "Fiscal Decentralization in Italy: Some Lessons". International Monetary Fund (IMF). Available at: http://www.imf.org/external/pubs/ft/seminar/2000/idn/italy.pdf [Accessed 11 February 2021].
PMG (Parliamentary Monitoring Group), 2016. "Department of Energy on its 4th Quarter 2015/16 & 1st Quarter 2016/17 Performance". Available at: https://pmg.org.za/committee-meeting/23159/ [Accessed 30 November 2016].
Pomerleau, K., 2015. "Sources of Government Revenue Across the OECD, 2015". Tax Foundation. Available at: http://taxfoundation.org/sites/taxfoundation.org/files/docs/TaxFoundation_FF465.pdf [Accessed 24 May 2016].
Powell, D., 2012. *Imperfect Transition – Local Government Reform in South Africa 1994–2012* (University of the Western Cape).
Radebe, J., 2018. "7 Takeaways from SA's Energy Plan – The Draft IRP 2018". fin24. Available at: https://www.news24.com/fin24/Economy/7-takeaways-from-sas-energy-plan-the-draft-irp-2018-20180827 [Accessed 17 February 2021].
Rakodi, C., 1986. "State and Class in Africa: A Case for Extending Analyses of the Form and Functions of the National State to the Urban Local State". *Environment and Planning D: Society and Space*, 4(4), pp.419–446.

Randall, R., 1938. "Some Aspects of the Finances of the Johannesburg Municipality, 1925–1937". *South African Journal of Economics*, 6(4), pp.402–417.
Ratcliffe, A.E., 1975. "Export Policy in Perspective". *South African Journal of Economics*, 43(1), pp.45–55.
Ratcliffe, A.E., 1979. "Industrial Development Policy: Changes During the 1970s". *South African Journal of Economics*, 47(4), pp.263–277.
Reddy, P.S. & Govender, J., 2013. "Democratic Decentralisation, Citizen Engagement and Service Delivery in South Africa: A Critique of Legislative and Policy Considerations". *Africanus*, 43(1), pp.78–95.
Reynders, H.J.J., 1972. *Report of the Commission of Inquiry into the Export Trade of the Republic of South Africa* (Government of the Republic of South Africa).
Reynolds, L., 2004. "The 'Get What You Pay For' Model of Local Government". *56 Florida Law Review*, 373, pp.383–384.
Ringane, J.T., 2013. *Challenges Caused by the Continued Non-Payment for Basic Municipal Services in the City of Tshwane* (Master's thesis, Tshwane University of Technology).
Roberts, S., 2006. *Sustainable Manufacturing? The Case of South Africa and Ekurhuleni* (Juta and Company Ltd).
Robson, W.A., 1928. "The Municipal Administration of Gas and Electricity in Great Britain". *Annals of Public and Co-operative Economics*, 4(2), pp.155–165.
Roelich, K. & Bale, C.S.E., 2015. "Municipal Energy Companies in the UK: Motivations and Barriers". In *International Symposium for Next Generation Infrastructure Conference* (International Institute of Applied Systems Analysis), eds Dolan, T.E. & Collins, B.
Ross, R., 2008. *A Concise History of South Africa* (Cambridge University Press).
Rutter, T., 2015. "Views from Local Government on George Osborne's Spending Review". *The Guardian*. Available at: http://www.theguardian.com/public-leaders-network/2015/nov/25/views-from-local-government-on-george-osbornes-spending-review [Accessed 23 May 2016].
SALGA (South African Local Government Association), 2017. "SALGA Calls for Increase in Fiscus Share for Local Government".
Sanderson, I., 2001. "Performance Management, Evaluation and Learning in 'Modern' Local Government". *Public Administration*, 79(2), pp.297–313.
Sankey, B. & Clark, G.M., 1925. *Report on the New Power Station of the Gas and Electricity Supply Department* (Municipal Council of Johannesburg).
Saunders, C., 1988. *Illustrated History of South Africa: The Real Story* (Reader's Digest Association South Africa).
Savage, D., 2008. "Key Themes and Trends in Municipal Finance in South Africa". In *Consolidating Developmental Local Government: Lessons from the*

South African Experience (University of Cape Town Press), eds Pieterse, E., Parnell, S., Swilling, M. & Van Donk, M., pp.285–320.
Schmidt, D., 2008. "From Spheres to Tiers: Conceptions of Local Government in South Africa in the Period 1994–2006". In *Consolidating Developmental Local Government: Lessons from the South African Experience* (University of Cape Town Press), eds Pieterse, E., Parnell, S., Swilling, M. & Van Donk, M., pp.1–23.
Schuster, L., 1995. "The Struggle to Govern Johannesburg". *The Atlantic*. Available at: http://www.theatlantic.com/magazine/archive/1995/09/the-struggle-to-govern-johannesburg/376455/ [Accessed 17 January 2017].
Seekings, J. & Nattrass, N., 2015. *Policy, Politics and Poverty in South Africa* (Palgrave Macmillan).
Siddle, A.M., 2011. *Decentralisation in South African Local Government: A Critical Evaluation* (Doctoral thesis, University of Cape Town).
Siddle, A. & Koelble, T.A., 2013. *The Failure of Decentralisation in South African Local Government: Complexity and Unanticipated Consequences* (Juta and Company Ltd).
Simkins, C., 1998. "Paper a Muddled Response to Critical Queries". Centre for Development and Enterprise (CDE). Available at: http://www.cde.org.za/paper-a-muddled-response-to-critical-queries/ [Accessed 10 November 2014].
Sioshansi, F.P., 2014. *Distributed Generation and its Implications for the Utility Industry* (Academic Press).
Slack, N.E., 2009. *Guide to Municipal Finance* (United Nations Human Settlement Programme).
Smit, B., 2009. *Capital Flows, Current-Account Adjustment and Monetary Policy in South Africa: Challenges for Monetary Policy-Makers in Emerging Markets*, p.67.
Smith, D.W., 2002. *Urban and Regional Change in Southern Africa* (Routledge).
Solomon, D., 1983. *The Economic and Financial Policies of Local Governments in South Africa: A Theoretical Analysis* (Master's thesis, University of Cape Town).
Solomon, D., 1990. "The Financing of Regional Policy: The Regional Services Councils". *South African Journal of Economics*, 58(2), pp.156–163.
South African History Online, 2011. "Segregationist Legislation Timeline 1930–1939". Available at: http://www.sahistory.org.za/topic/segregationist-legislation-timeline-1930-1939 [Accessed 14 July 2015].
Stanton, A., 2009. *Decentralisation and Municipalities in South Africa: An Analysis of the Mandate to Deliver Basic Services* (Doctoral thesis, University of KwaZulu-Natal).
Stats SA (Statistics South Africa), 2016. "Electricity Redistribution: Which

Councils Are Likely to Feel the Pinch?". Available at: http://www.statssa.gov.za/?p=4772 [Accessed 11 February 2017].
Stenson, K. & Watt, P., 1999. "Governmentality and 'The Death of the Social'?: A Discourse Analysis of Local Government Texts in South-East England". *Urban Studies*, 36(1), pp.189–201.
Steyn, G., 2001. *Governance, Finance and Investment: Decision Making and Risk in the Electric Power Sector* (Doctoral thesis, University of Sussex).
Steyn, G., 2003. *Administered Prices – Electricity: A Report for National Treasury*. National Treasury (NT). Available at: www.treasury.gov.za/publications/other/epir/Electricity.pdf [Accessed 15 February 2021].
Styan, J., 2015. *Blackout: The Eskom Crisis* (Jonathan Ball Publishers).
Svara, J.H., 2001. "The Myth of the Dichotomy: Complementarity of Politics and Administration in the Past and Future of Public Administration". *Public Administration Review*, 61(2), pp.176–183.
Tau, P., 2017. "Gauteng Infrastructure Funding Summit". Available at: http://www.gpf.org.za/Portals/0/Docs/2017%20events/ADDRESS-BY-PRESIDENT-PARKS-TAU.pdf?ver=2017-05-05-114340-417 [Accessed 24 March 2018].
Theron, E., 1976. *Theron Commission Report: Commission of Inquiry into Matters Relating to the Coloured Population Group*.
Thopil, G.A. & Pouris, A., 2013. "International Positioning of South African Electricity Prices and Commodity Differentiated Pricing". *South African Journal of Science*, 109(7–8), pp.1–5.
Tötemeyer, G., 1985. "Legitimacy and Viability: A Critical Analysis of the New South African Constitution (Act No. 110 of 1983) with Special Emphasis on Local Government". *Politikon: South African Journal of Political Studies*, 12(2), pp.59–65.
Trapido, S., 1971. "South Africa in a Comparative Study of Industrialization". *The Journal of Development Studies*, 7(3), pp.309–320.
Treisman, D., 2007. *The Architecture of Government: Rethinking Political Decentralization* (Cambridge University Press).
Tsatsire, I., Raa, K., Taylor, D. & Nealer, E.J., 2009. "Historical Overview of Specific Local Government Transformatory Developments in South Africa". *New Contree*, 57.
UNDP (United Nations Development Programme), 1999. *Decentralization: A Sampling of Definitions*. Available at: http://web.undp.org/evaluation/documents/decentralization_working_report.PDF [Accessed 18 September 2015].
USAID (United States Agency for International Development), 2000. *Decentralization and Democratic Local Governance Programming Handbook*. Available at: https://2012-2017.usaid.gov/sites/default/files/documents/2496/200saz.pdf [Accessed 25 September 2015].

Van Ryneveld, P., 1990. "Financing Local Government". *Urban Forum*, 1(2), pp.99–104.
Verhoef, G., 1998. *Industrialization in South Africa: A Historiographical Debate?* (Rand Afrikaans University).
Vosloo, W.B., Kotze, D.A. & Jeppe, W.J.O., 1974. *Local Government in Southern Africa* (Academica).
Wallis, J.J. & Oates, W.E., 1998. "The Impact of the New Deal on American Federalism". In *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century* (University of Chicago Press), pp. 155–180.
Weale, M., 2006. "Commentary – Big Government?". *National Institute Economic Review*, 197, pp.4–7.
Weeks, J., 1999. "Commentary. Stuck in Low GEAR? Macroeconomic Policy in South Africa, 1996–98". *Cambridge Journal of Economics*, 23(6), pp.795–811.
Whitehead, H., 2000. *Restructuring of the Electricity Distribution Industry* (Association of Municipal Electricity Undertakings [AMEU]).
Whittles, G., n.d. "Eskom to Cut Power from Five NC Municipalities". Eyewitness News. Available at: http://ewn.co.za/2016/01/29/Eskom-to-cut-power-from-5-NC-municipalities [Accessed 30 November 2016].
Williams, H.M., 2012. *Examining the Nature of Policy Change: A New Institutionalist Explanation of Citizenship and Naturalisation Policy Change in the UK and Germany* (University of Birmingham).
Williams, P. & Taylor, I., 2000. "Neoliberalism and the Political Economy of the 'New' South Africa". *New Political Economy*, 5(1), pp.21–40.
Wilson, D. & Game, C., 2011. *Local Government in the United Kingdom* (Palgrave Macmillan).
Wilson, W., 1887. "The Study of Administration". *Political Science Quarterly*, 2(2), pp.197–222.
Work, R., 2002. "Overview of Decentralisation Worldwide: A Stepping Stone to Improved Governance and Human Development". In *Federalism: The Future of Decentralizing States?* (United Nations Development Programme). Second International Conference on Decentralization, Manila, 25–27 July 2002.
World Bank, 1988. *World Development Report 1988* (Oxford University Press). Available at: https://openknowledge.worldbank.org/handle/10986/5971 [Accessed 10 November 2017].
Yelland, C., 2010. "SA Electricity Distribution Industry: Government Goes Back to the Drawing Board". *Daily Maverick*. Available at: http://www.dailymaverick.co.za/article/2010-11-23-sa-electricity-distribution-industry-government-goes-back-to-the-drawing-board#.WC55w1z95vo [Accessed 18 November 2016].
Yelland, C., 2015. "Domestic Electricity Prices of Six Metros and Eskom

Compared". EE Publishers. Available at: http://www.ee.co.za/article/domestic-electricity-prices-five-metros-eskom-compared.html [Accessed 15 February 2021].

Young, T., 1990. "Recent Developments in Regional Government in South Africa with Special Reference to Regional Services Councils". In *Collected Seminar Papers* (Institute of Commonwealth Studies), pp. 223–231.