THE REFORMING OF THE ELECTRICITY SUPPLY INDUSTRY: COMPETITION AND REGULATION: AN ANALYSIS OF ESI REFORMS IN NAMIBIA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS

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ABSTRACT

This study enquires into the choices to be made when selecting and implementing a reform model for the electricity industry. It argues that the appropriate reform model depends on the circumstances in the considered jurisdiction. Especially in small and less developed electricity systems a dilemma may emerge: the technical circumstances suggest the implementation of a model with few competitive elements, whereas political circumstances urge for a competition-oriented model. Hence, especially in small systems, a delicate trade-off emerges that significantly complicates the decisions to be made. This is obviously relevant for Namibia.

There are no standard answers to complicated questions of reforming markets. The implications of these reforms and implementation strategies for transparency in the regulatory systems, and improving accessibility of electricity, are yet to be seen. The study has identified the drivers of reform which are different from developed to developing states. It has also proven that successful reforms require an understanding of the source of monopoly power in the industry, as well as the size and characteristics of the market. It requires a transparent and clear regulatory framework capable of separating each role of the stakeholders clearly, separating competitive elements from natural monopoly elements.

Significantly, the study has analysed the relevant laws and regulations. The relevant provisions of the Namibian Constitutions in particular, have been discussed under appropriate headings. Special emphasis has been placed on the Electricity Act of 2000, the Competition Act of 2003 and the White Paper on Energy of 1998. The powers, duties and functions of the Electricity Control Board and other regulators particularly in SADC have been critically analysed. An enquiry has also been made into the purposed Gas Regulatory Authority as well as the Water Regulator. The Study has suggested clear recommendations on the legislation which require amendment.

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DEDICATION

This study is dedicated to my beloved late grandmother, Kuku Martha Nepembe Andreas (Gwaandili) who taught me from a very young age to take each challenge as a stepping-stone to better things and that the only limitations to my dreams are the ones I set for myself. Kuku this is for you and you will always be missed.

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Thanks Folks, I love you all!

THE AUTHOR

DECLARATION

This thesis is a true reflection of the candidate's own research, and has not been submitted for a degree in any other institutions of higher learning.

Foibe Louise Jacobs

Signed: **……..**

	06		October		2005
Date:	Day		Month		Year

TABLE OF ABBREVIATIONS

CCGT	Combined Cycle Gas Turbine
DME	Department of Minerals and Energy
DRC	Democratic Republic of Congo
DPE	Department of Provincial and Local Government
ECB	Electricity Control Board
EDI	Electricity Distribution Industry
IEA	Environmental Impact Assessment
EPC	Energy Planning Committee
ESI	Electricity Supply Industry
EU	European Union
GRN	Government of the Republic of Namibia
ICTs	Information and Communication Technologies
ILO	International Labour Organization
IPP	Independent Power Pool
MME	Ministry of Mines and Energy
MRLHRD	Ministry of Regional and Local Government, Housing and Rural Development
MSMB	Multi-Seller-Multi-Buyer
NER	National Electricity Regulation
PPA	Power Purchase Agreement
RED	Regional Electricity Distributors
TSO	Transmission System Operator

SAPP	Southern African Power Pool
SBM	Single Buyer Model
ADC	Southern African Development Community
SADELEC	Southern African Development through Electricity (Pty) Ltd.
SOE	State-Owned Enterprises

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CHAPTER 1
INTRODUCTION

1.1 General Background

Electricity is essential for the production of almost all goods. Reliable electricity systems have become more important because businesses and households rely on electronic devices to perform an enormous range of tasks, both basic and advanced. Thus adequate, reliable, competitively priced electricity is essential for modernisation, domestic growth and international competitiveness – and it is among the most urgent challenges facing developing and transition economics.

For centuries this section of the infrastructure industries and transport have been regarded as crucial for generating economic growth, alleviating poverty and increasing international competitiveness. The main drivers for the increased concentration and public ownership of the industry were potential economies of scale in power plants, the requirement for large amounts of capital that could be facilitated by government guarantees, and the fact that electricity was seen to be an essential ingredient of government's industrialisation strategy. Competition and private ownership in electricity sector were thought to be non-optimal. Instead, the state viewed this industry as one of the key instruments for industrialisation, employment creation and economic development.

Until a century ago most electricity industries were vertically integrated monopolies owned by state or municipal governments. This was mostly due to the long-held assumption of the industry being perceived to be a monolithic natural monopoly.[1]

[1] Joskow (2003).

However, since the early 1980s, when Chile began a radical restructuring and privatisation programme, more than 70 countries have introduced electricity reforms.[2] Especially over the past decade, views on how electricity should be owned, organised and regulated have changed dramatically.[3]

Recognising the performance problems of state-owned, monolithic network utilities, and driven by technological progress, advances in economic thinking and mounting evidence on the high costs of government intervention – nearly all industrial and many developing and transition economies have implemented far-reaching infrastructure reforms. These institutional reforms have entailed a combination of competitive restructuring, privatisation and establishment of regulatory mechanisms. A key attraction of privatisation is that it places the realignment of prices with underlying costs at the centre of the reform agenda. Investors demand cost-reflective tariffs before they commit their capital and expand networks. In recent years, however, there has been growing recognition that network utilities are not monolithic natural monopolies. Rather, they encompass several distinct activities with entirely different economic characteristics – entailing a mix of competition and monopoly elements in supply. Technological progress (which has proven a potent enemy of natural monopolies)[4], along with the high costs of regulatory intervention, have been continuously undermining the public utility concept. As a result, it has become widely accepted that the vertically integrated monopoly model no longer applies to all network utilities. Thus, most analysts now believe that network utilities should be unbundled, horizontally and vertically, with potentially competitive segments under separate ownership from natural monopoly components.

[2] Bacon and Besant-Jones (2001).
[3] Newberry (2000a, 2001).
[4] Klein (1996a).

Many reasons have been given for reforming ESI all over the world. However, there are three basic principles for initiative reforms, namely:

(a) Financial performance objectives. This principle is intended to reduce costs and consequently tariffs which will be achieved through improved efficiency.

(b) Public fund objectives. This principle is intended to reduce public debt burdens by reducing public funding of the ESI or by selling the electricity assets to generate funds for the state coffers.

(c) Customer service objectives. This principle is intended to improve service quality or coverage.

In most developing and transition economies, private participation in infrastructure and restructuring has been driven by the high costs and poor performance of state-owned network utilities. Under state ownership, services were usually under-priced and countries often could not afford the substantial investments required to expand services to large parts of their populations. Deficiencies in infrastructure quantity and quality imposed a heavy penalty in terms of growth and welfare.[5]

The details of the institutional reforms and the regulatory dimensions that are necessary to improve performance in ESI remain quite complex. There is no universal reform model. Every restructuring and private participation must take into account the sector's features and the country's economic, institutional, social and political characteristics[6]

[5] Newberry (2000).
[6] Vickers and Yarrow (1998).

Some components of these industries have cost conditions more conducive to competition, including activities related to upstream production and downstream supply (electricity, gas), certain parts of the network and the operation of services on the physical network.[7]

Experience has shown that the success of sector reforms depends on a set of subtle factors which can be referred to as axioms. These factors are accountability, ownership of reform, institutional and technological maturity, social development enhancement and a holistic approach. Results have unfortunately been mixed. A number of jurisdictions, such as the United Kingdom and the State of Victoria in Australia, have largely achieved their reform objectives. Some jurisdictions, such as the State of California, have clearly failed, resulting in higher retail tariffs and greater public debt burdens with no increase (or even a decrease) in customer service levels. Others have made progress in one or two of the objectives, but clearly failed in the others.[8]

The electricity industry in Africa was no exception. This industry was traditionally operated and driven by natural utilities that are state owned. Historical facts have revealed that these national (state-owned) utilities have been (and mostly are still being) operated as integrated companies overseeing the core functions of the electricity industries in their respective countries. These core functions are Generation, Transmission and Grid Infrastructure, Distribution and Supply.

The operation of integrated national (state-owned) power utilities in Africa also meant that administration and regulation of the power supply industries were conducted under one or two government ministries.

[7] Gray and Klein (1997).
[8] The State of Orissa in India eliminated the drain on public funds through privatization of distribution and thermal generation, but private ownership has not yet resulted in improved services.

This phenomenon dictated the adoption of uniform national tariff structures for a classified group of customers such as domestic, agricultural, mining customers and commercial and industrial customers. Thus, customers in a given category would have an identical tariff structure that varied from other categories because of the differences in customer load profiles.

Namibia was no exception. Following its independence in March 1990, the Government of the Republic of Namibia (the GRN) formulated its policy agenda, namely the Energy Plan, which forms a critical element in the overall reform plan. To this effect, the Ministry of Mines and Energy (the MME) developed a comprehensive Energy Policy. In 1996 the MME established the Energy Policy Committee to drive the process. This culminated in the drafting of the White Paper on Energy Policy which was subsequently adopted by Cabinet in May 1998.[9]

1.2 Strategic Objectives of the ESI

1.2.1 General

Electricity systems are under stress in many developing countries. The balance between demand and supply is tight, and lack of spare capacity leads to blackouts. Thus, significant investments are needed in generation, transmission and distribution.

In most developing countries electricity prices stopped covering costs and were far below the long-run incremental costs of system expansion. Such pricing made it difficult to maintain facilities and finance new investments. As a result, systems became inadequate and unreliable and supply shortages increased.

[9] For Examination of White Paper, see page 109

Moreover, under pricing for favoured groups became more noticeable politically, yet harder to reverse.

Political interference also led to management deterioration and extraordinarily high excess employment. Lack of effective monitoring led to theft and losses that undermined the sector's financial sustainability.[10] These factors are not necessary all present within the Namibian ESI and cannot all be said to be the driving factors of the Namibian reforms. As will be seen, it appears that they were taken into consideration during the drafting of the White Paper on Energy Policy.

1.3 Fundamentals of the Namibian ESI

The ESI in Namibia has one feature which makes it distinctly different from those in the region, namely the state-owned utility NamPower is not the creation of any statute. NamPower is a private company registered and incorporated under the Companies Act, No. 61 of 1973. All its shares are, however, owned by the Government. In many sectors state owned utilities are created by statutes. However, despite its distinct *legal persona* characteristic, the ESI in Namibia was dominated by NamPower, the vertically integrated company[11] About 35 institutions in the distribution which include municipalities and regional distributors were responsible for electricity distribution and supply in their respective jurisdictional towns and villages. Until March 2001, Northern Electricity, a private company (the only one at the time) was responsible for the management and operations in the northern part of the country on behalf of the

[10] Joskow (2003a).
[11] Vertical integration describes the degree between the main functions within the electricity supply industry. A utility is said to be vertically integrated if it performs all functions from generation, transmission, distribution and supply. This has been the traditional way of structuring utilities.

Ministry of Regional and Local Government, Housing and Rural Development (the MRLHRD).
These distributors were all *de facto* monopolies, and consequently customers had no choice of suppliers. Governance of the sector politically was divided between the MME and the MRLHRD. The latter played a role, particularly in relation to local authorities involved in distribution.

With the exception of the stand-by diesel power station in Katima Mulilo all the other power stations[12], the high voltage transmission lines and interconnections with neighbouring countries, were owned by NamPower.

Prior to 1989 the ESI in Namibia was thus broadly characterised by a monopoly in transmission and generation, and a highly fragmented distribution sector. The institutional environment was characterised by a large degree of fragmented responsibilities, more so in the distribution area but also at government level. As a result of this fragmented nature of some functions and a large number of small participants, scarce resources, were duplicated and wrong priorities were entertained. We shall revert to these issues in due course.

Reforms are being introduced in the ESI. The reasons for these changes as will be seen in the coming chapters include the desire to introduce Independent Power Producers (IPPs), both locally and regionally. Tariff pressures from customers and the emergence of a single electricity market for the region through the Southern African Power Pool (the SAPP) have created other opportunities for energy trading as it provided alternative transmission links to the SADC states. Thus, overall the need to move towards greater levels of competition was inevitable.

[12] A run of the river hydro power station at Ruacana on the Kunene River installed capacity of 240MW two thermal power stations. Van Eck, a coal-fired plant installed capacity of 120MW, and Paratus, a diesel plant at the coast, installed capacity of 25MW.

In order to achieve these objectives, legal, regulatory and competition guidelines need to be established and articulated. Further, their, impact, effect and benefits need to be analysed and weighed. It is thus against this background that this research seek to analyse the ESI reform in Namibia.

Emphasis will be placed on the relevant provisions in the Namibia Constitution, the Electricity Act of 2000, Local Authorities Act of 1992, Competition Act of 2003 and the regulations made in terms of these Acts.

1.4 Research Questions

The Study will in particular attempt to explore answers to the following questions:

(i) What are the drivers of reform in Namibian and how did the Government respond to those drivers?
(ii) Is there room for competition in Namibia?
(iii) How should the market be structured and regulated to safeguard a competitive system?
(iv) How does the legal and regulatory framework respond to the challenges of these reforms?
(v) What is the role of competition and regulation in the ESI and what is the role of the Regulator therein?
(vi) Does sequencing the reform process play a role in its success?

1.5 Objectives of the Research

Developing countries have to reform technically and financially less efficient electricity systems with less developed private sectors, weak economic and political institutions, shortage of skilled human resources and lack of regulatory experience. The sector's systematic characteristics and the country's institutional endowment should weigh equally in the design of reforms. In addition, distributional and access to service aspects of reforms call for a redefined state involvement rather than a complete withdrawal from the sector.

The study will contribute to the reform debate by examining the economic and regulatory challenges and benefits of these reforms. Further, it looks at the adequacy of the legislative and policy framework supporting the realisation of the reform objectives

1.6 Hypothesis

This research is based on a descriptive examination of the ESI and is not meant to be a hypothesis testing research. The research, therefore, intends to focus primarily on the economic, legal, and regulatory and competition dimensions of the reform exercise. While an economic analysis appears straight forward, its implications on the analysis of the development of law is significant. It supports the thinking that the law has fundamentally an economic logic, and that its efficient and economic consideration in reform dictates how the law evolves. In turn, the discussion of the legal-economic nexus will serve to enrich the analysis of the legal conception in this largely economic discussion.

However, the following implicit hypotheses inform the study:

(i) Reform is largely dictated by consideration of economic efficiency which is then later addressed by the legal framework, and that the old structure has its efficiency logic which is no longer suitable to present conditions no matter the size of the market;

(ii) Reform is a complex policy process which requires adequate capacity within the institutions tasked with its implementation. Legal and regulatory weaknesses in it can create problems and challenges in effectively realising its objectives;

(iii) The choice of a market model may have implications for competition and regulatory oversight;

(iv) Lack of a carefully thought through legal and regulatory framework can lead to problems and delay implementation; and

(v) There is a place for competition and regulation in public industry it is a process which requires balancing to ensure flexibility and regulatory certainty.

1.7 Data, Methodology and Limitation

The research is entirely based on descriptive analyses and secondary information. In an attempt to review the impacts, other countries' information and date are used as empirical evidence. Further, reports, sector reviews and especially unpublished ('grey') materials on the topic of electricity reform in Namibian have been analysed.

In particular, independent studies and articles by shareholders and policy advisors are greatly used. The Harvard Business School (HBS) Library served as an important source of research literature.

Official government documents, World Bank reports, as well as transcripts from the internet were utilised. This study also draws on the knowledgeable persons in the industry by discussing various research issues with role players, particularly from the following institutions: NamPower, the ECB, Saha Energy International, Harvard Electricity Policy Group, the MME, Eskom and the Coordination Centre of SAPP.

The reform of electricity, regulation and competition is a relatively new phenomenon in Namibia, and in particular ESI reform is still in its infancy. Expertise is limited or nonexistent; hence, the information on Namibian empirical evidence is limited. This constrains the analysis of the effects, particularly since the process is in the initial stages. Most of the information found are either at proposal level or predictions. Further research on the topic is recommended as it would fill the gap and complement findings of this paper. The thesis page limitation prevented the author from exhausting all the issues.

CHAPTER 2
LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

2.1 Introduction

The study adopted an interactive approach in analysing how the Namibian ESI is being reformed in line with models as discussed by Newberry (2000), Joskow (2003 and the World Bank Report (2004). The premises of these discussions are the sequencing of the reform process and treatment of stakeholders on an 'equity basis'. Further, for reform to be successful it must comply with the basic five requirements called axioms, which are illustrated as figure 1 below.

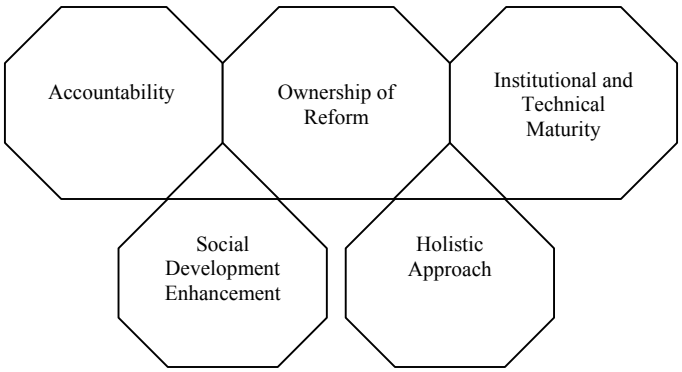


Figure 1: The Five Axioms of Sector Reform

Newberry states that accountability denotes the result of authorising a person or entity to take certain actions, establish a target against which the success of actions may be measured and the rewards and sanctions associated with that performance against that target. Reform efforts should therefore focus first on creating systems of accountability that can support current and planned patterns of ownership and market structure.

Further, Newbery maintains ownership must be built through local participation at all stages of the reform programme. He adds that the reform must be aligned with broader institutional and technological maturity. Adequate technology must be in place at each level of reform.

The independence of the Regulator and the regulatory process must be clear. This means there must be clarity on the enforceability of contracts and that rights are reasonably well defined; that dispute resolution is in place and/or that legal remedies are timely, impartial and enforceable.

With regard to social development enhancement, Newbery states that the reform programme must continuously justify itself in terms of the socio-economic benefit it achieves. The views and opinions of stakeholders need to be measured, benchmarking of performance level done and impact of the reform targets taken into account.

Finally, the holistic approach is at times referred to as 'trying it all together'. The case of reform is often made on the basis of economic and efficiency benefits to the consumer and the nation, therefore the design of the reform must take all these considerations into account.

Abel and Parker (2001), Murray (2000) and Besant-Jones (2000) support the traditional argument of the perception of electricity along with water, telephones and natural gas industries being natural monopolies.

Smith (1995 : 2) accredit these developments to, amongst others: the revisionist views on State Regulation; the theoretical and empirical challenges to the natural monopoly view of electricity industries and incentive failure under particularly the rate of return (RR) regulation which has weakened political opposition to reforms. Webb (1998) maintains that reforms are designed to ensure that the industries become competitive, lower costs deliver better services and generally enables it to make full contributions to various countries' economic development. This, according to Smith *(supra)* becomes a reason why the reform changes have to involve regulation, industry structure and changes in ownership.[13]

The OECD Report (2002), in the researcher's view, correctly summarises the issue of reforms. It argues that the case of introducing reforms in those parts that can be competitive[14] entails more than just removing regulatory and legal barriers to entry. The Report maintains that it is also necessary to ensure that new entrants have undiscriminatory access to any essential input provided by the remaining uncompetitive monopoly parts.[15] The Report goes further and gives a number of options, amongst them the separation of the uncompetitive segment of the utility preventing it from competing in the competitive part in the sector and therefore eliminating the incentive to restrict. The Namibian situation of taking away the distribution licence from NamPower and only to allow the Regional Electricity Distributors (the REDs) to own the right and licences of distribution and supply in this value chain can be viewed as an

[13] The last element does not always occur in developing countries, more especially in most SADC countries.
[14] Generation and supply.
[15] This remains one of the justifications for reforming vertically integrated industries. It is argued that when monopolies as owners of essential inputs also compete in a down-stream competitive activity, they have both the ability and economic incentive to restrict competition. This may take a number of forms such as rising prices or denying access to essential inputs.

attempt to separate one competitive element from the rest of the value chain.[16]

The second possible approach is the joint or club ownership of a natural monopoly facility by firms which compete in the competitive activity. Again, in the Namibian case the policy decision to club local authorities and village councils to form various REDs could be seen in this light, although the primary rationale for this is entirely different. The third possible approach is the allocation of a share of the total capacity of the natural monopoly facility to each of the down-stream competing firms.[17] The fourth and last approach entails the separation of ownership and control of the natural monopoly facility, by allowing ownership to remain in the hands of competing firms and placing control in the hands of a neutral entity. These are called *structural reform approaches* to distinguish them from *behavioural approaches*.[18]

It is also imperative that, besides the abovementioned approaches, the policy and regulatory frameworks take into consideration that for each component of reform a range of other options exist which could be considered. These are:

(i) vertically integrated (either nationally or regionally);
(ii) vertically separated by generation transmission and supply;
(iii) vertically separated and the horizontal separation of generation and distribution/supply with a focus on competition for the market at generation level, selling power to a Single Buyer model; and

[16] It must be borne in mind that policy and law did not clearly from the initial stage indicate the approach. It is also clear that NamPower is still indirectly involved in distribution through its equity holding in the REDs.
[17] This might make it more difficult operationally, especially in the Namibian setup.
[18] The last approach is not common in the developing countries.

(iv) vertically and horizontally separated to introduce product market competition into generation (through a pool) and in retail supply.[19]

For the purpose of this research only option (iii) will be discussed in detail elsewhere. Webb (*supra*) argues that for each of the above options, it does not matter whether assets are owned publicly or privately. The key difference concerns their focus on and their ability to deliver competition. These sentiments are shared by scholars such as Eberhard, Joskow and Shuttleworth.

2.1.2 Why Reform: Analysis of Drivers of Reforms

The forces driving structures changes in the electricity industry differ between countries – especially between industrial and developing countries. In mature industrial countries, pressure for change has grown with the emergence of excess capacity and from disillusionment with capital-intensive generation projects triggered by the oil crises of the 1970s. In developing and transition countries reforms have been driven by the poor operating and financial performance of state-owned electricity systems (with low labour productivity, poor service quality and high system losses), lack of public funds for badly needed investments, unavailability of service for large portions of the population and government desires to raise revenue through privatisation.[20] Reforms were also prompted – and facilitated – by technological innovation.

[19] Webb (1998).
[20] IEA (1999); Bacon and Besant-Jones (2001); Joskow (2003a). An important distinction between developing and transition economies is that the latter have achieved much higher coverage in the electricity sector.

The poor technical performance coupled with capacity constraints which lead to frequent load shedding,[21] deficiency of maintenance non-technical losses are some of the drivers of the reform process.
These drivers are not all entirely present in Namibia. However, the distribution sector has experienced these problems.

In recent years infrastructure in developing and transition economies has been plagued by three related problems; namely chronic investment, under pricing and low operating and financial performance.

There are other considerations such as the need to remove subsidies or at least make them transparent;[22] the desire to raise revenue for the State, pressure for reform from international financing organisations, such as the World Bank, and access to electricity due to low national electrification levels which need to be taken into account.

These drivers are not at all exhaustive. Heller and Victor (1999) state that reforms can also be pursued as part of a broad-based restructuring of the nation's economy, an attempt of the State to exit a wide array of industries.

Bhavagan (1996: 7) argues that the existing legal and regulatory framework may be inappropriate for and incapable of promoting reform competition and private sector participation, hence the need for a new framework.

[21] Load shedding is the rapid reduction of stress on the network by intentional shutting of power flow to some electric circuit which occurs when the network demand is higher than the generation supply. This is necessitated by the need to protect system security, i.e. to protect the entire system from failing.

[22] The cross-subsidies embedded in monopoly pricing structures cannot be defended on equity grounds.

It is equally important to create a regulatory environment, and regulatory authority which is independent from both the State and sector and capable of, *inter alia*, introducing a transparent system for tariff setting.[23]

The rationale and the drivers for reforms in Namibia are not entirely different from the ones mentioned by both Bacon *et al* or Victor and Heller (*ibid*). In Namibia the ESI has to a large extent assisted Government to deliver some social and economic goals.
Further, there was a realisation that electricity assets are important instruments in the pursuit of economic goals which are promoting integrated rural development with the help of appropriate energy provision, widening the participation and ownership of the private sector,[24] achieving universal access and ensuring security of supply.[25]

The financial performance of NamPower was relatively good. However, the distribution sector where most municipalities and local authorities are role players needed urgent attention. Many of these entities were not financially viable and their technical departments were struggling as a result of lack of capacity. There was a huge backlog for connections, non-payment from customers and huge debts to NamPower. As a result, there was inadequate investment in network maintenance, thereby compromising security and reliability of supply.[26] The situation was further compounded by the existence of wide ranging disparity of tariffs for the same categories of customers between distributors. The system was simply too heavily cross-subsidised.

[23] There is significant scope for flexible pricing to alleviate supply shortages because consumers are willing to pay for new and better services as the sector becomes suited to competition.
[24] Mostly the previously disadvantaged in the form of Black Economic Empowerment (BEE) initiatives. Furthermore, financial, technical and managerial resources of a private entity may give them an advantage in keeping abreast of this complex industry.
[25] Eberhard (2000).
[26] EMI Restructuring Study, MME (1998).

The result was difficulty in retaining and attracting skilled and motivated human resources. Because of these problems, it was inevitable that the structure of distribution must change.[27]

2.1.3 Why Regulation?

Garner the leading authority on Administrative Law states that "*there are an infinity of examples of these [regulations] and there is not limit to the identity or kind of administrative agency that may be authorised by Parliament to make subordinate legislation*"[28]. Hunt (1998) describes regulation as a set of instruments by which government directly or indirectly through an agency sets requirements on enterprises or citizens. Littlechild (2001) argues that the general goals of regulation are to promote efficient markets, correct market failure and bring transparency into the market to prevent undesirable behaviour or activities or to enable good ones. This author maintains that the first justification is the belief that the utility sector output are essential for the well-being of the society and business. The second justification according to this author is that technological and economic features of the utility are such that a single firm cannot serve the overall demand for the output at a lower cost than any combination of firms.

Greer (1993) argues that the answer to why we have and must have regulation revolves around justice and fairness. Further, he maintains that regulation should focus on:

[27] ESI Tariff Study, MME (2000).
[28] J.F. Garner, Administrative Law, London, Butterworth 1997, p. 63: see also WJ Hosten, Introduction to South African Law and Legal Theory, p.263.

(a) pursuing social fairness and promoting universal service – through pricing that balances economic efficiency and social equity;

(b) ensuring incentives for investment;

(c) promoting fair competition – by lowering entry barriers and giving entrants access to network infrastructure;

(d) facilitating innovation – by focusing on goals to be achieved and giving operators and investors leeway to introduce more efficient technologies and innovative service arrangements;

(b) protecting public health and safety, and avoiding harm to the environment; and

(c) ensuring that services are reliable and networks interoperable.

Although these principles apply to all countries, developing and transition economies pose four special challenges that realign the priorities and tighten the institutional constraints facing regulators.[29] Firstly, developing countries do not have access to electricity, large portions of their populations live in informal settlements and low-density rural areas that traditional utilities do not reach. Secondly, developing and transition economies, the costs of connecting to infrastructure networks can be significant relative to incomes, and past policies have discouraged a large scale search for cheaper alternatives. Thirdly, most developing countries have few administrators and technical workers with sufficient training and experience to enable them to be effective regulators.

Fourth, developed countries have relatively stable political systems, independent judiciaries and effective court systems. Thus, investors have the assurance that their rights will be protected without undue risks. The reverse is true for most developing countries which are undergoing institutional and political transformation. Investors are as

[29] Laffont (2000); Smith (2000a).

a result facing more political risks and less security in making long-term investments.

Schwella (2001) mentions that the regulatory function must be separated from the functions of policy making and implementation.[30] Laffonte and Tirole (1993) describe the primary purpose of a well-designed regulatory system to be the protection of consumers from monopoly abuse while it at the same time provides the investors with the protection from arbitrary political action alongside incentives for efficient operation and investment.

It appears that it is not politically possible to introduce competition without some form of regulation.[31] However, Newberry (2000) cautions that although regulation should be confined to the natural monopoly elements (in this case, the networks), the competitive elements will need some regulatory oversight, albeit it only to ensure that markets are not manipulated nor market power abused.

Regulatory agencies and processes should be designed according to three complementary principles: independence, accountability and transparency.[32]

- *Independence*: Independence of an agency [33]– Installing a downstream institution with explicit discretionary powers – and specific interests and information – may help the upstream regulator

[30] International best practices indicate that role definition is critical to effective regulation and competition.
[31] Even where competition is possible and present, the market will need to be monitored.
[32] Neven *et al* (1993); Seabright (1994).
[33] defined as the existence of discretionary powers to pursue (clearly defined) specific goals that differ from the more complex goal of nurturing the 'public interest' – may help to supervise the activities of the agency and, thus, to increase its accountability.

to credibly commit to not interfering (arbitrarily) with the process of day-to-day regulation.

- *Accountability*: Regulatory agents should be held accountable to the general public through the political process. The incentives of the officials to behave opportunistically may be limited by establishing review procedures and instruments for disciplinary action as safeguards[34]
- *Transparency*: Regulatory agencies should be obliged to make public the information and reasoning upon which their decisions and actions are based. This helps to reduce informational deficiencies and asymmetries, which are important sources of regulatory transaction costs[35].

Many critics of regulation have argued that regulation is not needed and has put many obstacles in the way of competition.
To this, Bhavagan (1996) maintains that the regulatory process is aimed at ensuring the separation of government, as policy maker, from its regulatory responsibility.

The phenomenon of competition and regulation is, according to Schwella (2000), so intrinsically connected that there are at times difficulty to establish among the issues affecting them from a conceptual point of view.

[34] Neven *et al* (1993: 173). To be compatible with independence, reviews should take place at regular intervals and on the basis of clearly (pre-) specified criteria. Restricting the exercise of influence to infrequent and predetermined intervals may also help to reduce regulatory capture as the ability to exercise influence at such intervals may be more equally distributed between different interest groups than is the ability to exercise day-to-day influence

[35] Separating regulatory competences, that is, giving specific competences to regulate or monitor a single firm or industry to two or more different agencies may entail conflicting and, hence, inefficient decisions. At the same time, however, it may lead to – or help strengthen – an efficient system of checks and balances in which (at each horizontal level of regulation) different institutions of regulation in legislation, executive and judiciary monitor one another. This may, for example, make it more difficult for interest groups to exert influence on distinct regulatory institutions or to capture regulation.

Hansen (2000) and Eberhard (2000) argue that it is useful to delineate different categories of regulation, namely: Competition regulation, which looks at the structure of markets, controls anti-competitive behaviour and reviews mergers; and Economic regulation, which adopts and implements measures to control monopoly pricing mechanisms, such as cost of service regulation (e.g. rate of return) or incentive regulation, which involves price or revenue caps or yardstick, or performance based franchising regulations.

The primary virtue of any reform and unbundling is to promote competition, ensuring that firms and entities provide their services at efficient prices.

2.2 Reforming the Industry to Introduce Competition

The Concise Oxford Dictionary defines "competition" as "*an interaction between organisations that share a limited environmental resource*".[36]
From the business and legal perspective "competition" means "*the activities conducted by two or more business enterprises vying with each other to obtain market supremacy or superiority*".[37]

Until the early 1980s, there was a widespread belief that product market competition was not possible in the electricity industry. This belief has been overturned and many countries have reformed their electricity industries in order to introduce competition and improve the services delivered to consumers. In general, increased competition is said to deliver increased benefits to society.

[36] The word comes from the Latin word "*competition*", which means "*rivalry*".
[37] Note from this definition how superiority and not dominance is the desired outcome.

Competitive markets provide lower prices, more choice, better quality and more innovation than monopolistic or oligopolistic markets.
It is, according to Webb (*ibid*), important to distinguish between four main types of competition. These are

(i) Competition *in the market*, or product market – typical form of competition for most of the products which we use in our daily lives.

(ii) *Contestability* which occurs when the *threat* of competition is sufficient to force an incumbent to act as if it faced real competition in the market even when it is in a monopoly position. The threat could be either from the entry of a competitor if prices are above the level expected in a competitive situation, or from an alternative form of supply becoming competitive if prices are raised above the competitive level.

(iii) Competition *for the market*, which focuses on the competitive supply of inputs. For example, a local government entity which has a monopoly over the supply of a local service may procure under competitive arrangements such services as office cleaning and maintenance.

(iv) *Comparative competition* (benchmarking). In its strongest form this involves setting prices for one company based on the costs incurred under best practice within the industry, either in the country or internationally.

In many developing countries markets are too small for substantial competition to emerge. In electricity, for example, 60 developing countries have peak system loads below 150 megawatts, another 30 between 150 and 500 megawatts, and possibly another 20 between 501 and 1000 megawatts. Even a 1000-megawatt system is small for introducing competition.

Hunt and Shuttleworth (1996) maintain that in introducing competition in the ESI there must be clarity of what problems it is supposed to solve For competition to be effective, it must meet the requirement of, inter alia, the robustity of the market rules, many buyers and sellers, as well as demand and supply response (Hunt *et al, supra*)[38].

Some analysts have questioned the need to regulate, at least extensively, the natural monopoly components of infrastructure industries by distinguishing between competition *in* the market and competition *for* the market. Proponents of this view have resurrected an old yet powerful idea: when a large number of firms submit non-collusive bids to become the supplier of a natural monopoly activity, the resulting price need not reflect exploitive market power.[39]

It is evident that regulatory design is crucial in achieving effective competition in the sector. In most reforming countries, energy companies have shown a strong tendency towards vertical integration and dominant position in the market (Namibia is no exception). Complex ownership structures of large international energy companies and a lack of experience on the part of regulators have also resulted in horizontal reintegration of the sector. Further, vertical integration of generation firms with transmission and distribution utilities can create incentives for discrimination among generation firms for gaining access to grid.

Most countries have imposed limitations on cross-ownership between generation and transmission utilities, and some countries have introduced "regulated" rather than "negotiated" third party access arrangements.[40] However, in some countries, limitations on cross-ownership in generation and distribution have been less stringent. Rules concerning allocation of common transmission costs,

[38] Klein and Roger (1994).
[39] Demsetz (1968).
[40] Todd Energy (2000).

congestion pricing and arrangements for financing investment expansion of the grid system can affect competition in the sector. The main issue in the allocation of common costs is the development of an appropriate and workable procedure for calculating operating, maintenance and capital costs. For example, allocation of cost is complicated by the existence of economies of scale in transmission.

Although there are various models in place, there is currently a lack of workable models that entirely and satisfactorily address these issues, the difficulty being to develop a theoretically efficient model, which at the same time is simple to implement.

The problem with electricity supply is that transmission and distribution are natural monopolies and cannot be operated competitively. The logical solution is to separate potentially competitive generation and supply (or retailing) from the natural monopoly networks. Generation and supply can then operate in competitive markets and the natural monopolies regulated to imitate the effects of competition.

The crucial question is how to introduce competition into generation (and supply). The standard answer is that competition requires a market, so generation needs a wholesale electricity market organised as a power exchange or a pool

Thus, this approach should be pursued with caution. It may be sustainable if there is sophisticated regulation of competition and regulators can find a way to ensure adequate investment in transmission. California's [41]recent experience is a reminder that sophisticated regulation is a scarce commodity even in advanced industrial countries. The model chosen for competition, as will be seen later,

[41] Newberry (2000); Joskow (2003a).

will reflect the state from which the industry is being reformed. The SAD-ELEC Report (1998) discloses that where, for example, there are severe capacity constraints, and there is usually a tendency to opt for a Single-Buyer model, at the same time encouraging private sector investments into generation capacity. Important technical factors are market size and network density. One additional and important determinant is political stability.

In small and less developed countries, a dilemma may emerge: the technical circumstances suggest the implementation of a model with few competitive elements; the political circumstances often suggest a more competition-oriented model. It must be realised, however, that the introduction of competition has also introduced new debates bringing about important questions regarding the proper relationship between sector-specific regulators and economic wide-competition agencies. The debates have occurred specifically about the degree to which the sector, being opened up to greater competition, should also be subject to competition laws. This is especially true where a country like Namibia has a sector-specific legislation and Regulator,[42] competition legislation and an economic wide Competition Agency.[43]

The same situation also prevails in South Africa. Eberhard (2000) noted, it is a very complex situation in the ESI as some parts of the ESI are not easily placed within a competitive environment while others are potentially competitive and should be subject to the country's competition policy legislation and oversight. Safeguards are necessary to limit opportunistic behaviour of the different agents in supply and demand. This may explain why hierarchical or hybrid governance structures have traditionally been dominant in electricity supply (and other network industries).

[42] Electricity Act, 2000 and the ECB established under the Act.
[43] Competition Act, 2003 and the Competition Commission established under this Act.

These comprehensively integrated or cartelised industry structures, however, may lead to increased problems of opportunistic behaviour of the monopolistic (dominant) firm(s) vis-à-vis consumers. Hence, the specific contractual problems of the electricity industry may entail a "competition failure" and, thus, a potential justification of a sector-specific regulation. There is no fundamental difference on this matter between developed market economies and transition countries. The differences are confined to the degree of political and legal instability that complicates the design and enforcement of safeguards.

Littlechild (2001) argues that it is generally not politically possible to introduce private ownership and competition without regulation. He adds that, a modern regulatory framework gives the utility Regulator a duty to promote competition and encourage new entry, in contract to traditional regulatory reform which sought to replace competition.

Competition does not automatically follow reform or government withdrawal from the market. There is thus a need to oversee the new structure through regulation.

2.3 Conclusions

Electricity is an industry where the liberalisation of potentially competitive segments and the regulation of network access are particularly difficult to implement. The production of the final product requires the coordinated supply of generation transmission and distribution. Every stage of the supply chain is characterised by a high degree of capital intensity and a high longevity of highly specific assets.

There are substantial vertical and horizontal complementarities, both in operation and in investment planning, and both between and within the different stages of the supply chain.[44]

The complementarities stem from three technical peculiarities. First, electricity cannot be economically stored but must be simultaneously produced with consumption. Second, the efficient supply of electricity to customers generally requires the use of grids, that is, a complex system of transmission and distribution cables. These grids typically connect many power stations with a large number of customers and show economies of density, scale and scope. Third, the costs of generating electricity vary substantially in the short run. Taken together, the operation of the several parts of an electricity system must be coordinated tightly within and between different stages to avoid system instability and to provide electricity at low cost.

Regulation can serve to infuse trading confidence into otherwise problematic trading relations[45]. The regulation in question must be "appropriate", in order to foster competition and improve incentives to invest in specific assets.

[44] Joskow and Schmalensee (1986); Kumkar (2000).
[45] Williamson (1996); see also Schenk (1997: 145).

CHAPTER 3
STRUCTURE AND CHARACTERISTIC OF ESI, REFORM MODELS AND SEQUENCING OF REFORMS

3.1 Introduction

The past decade has seen dramatic change in views about how network utilities should be owned, organised and regulated. The new model calls for increased reliance on private infrastructure to improve efficiency, promote innovation and enhance services. But after a series of financial crises, corporate irregularities and stock market collapses, the California electricity crises, and blackouts around the world, clear guidance is needed on what should be done for infrastructure – as well as reassurance about (or qualifications of) earlier, more confident messages. What are the promises and perils of the new model? Which principles should guide future efforts to restructure, regulate and expand infrastructure?

Every restructuring and privatisation programme must take explicit account of each sector's features and the country's economic, institutional, social and political characteristics[46]. The suitability of reforming electricity in a specific manner needs therefore to be assessed based on the circumstances of each case.

3.2 Characteristics of the ESI and Reform Models

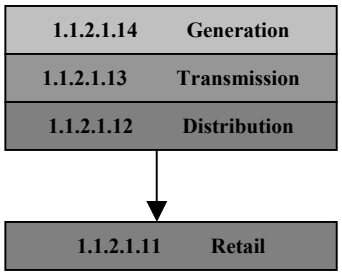
The supply of electricity consists of three interrelated segments: generation, high-voltage transmission, and low-voltage distribution (Figure 2).

[46] Laffonte (2003).

In recent years, as a result of sector reforms, supply or retailing – power procurement, billing and customer service – has increasingly been considered a fourth component. A wide variety of technologies and primary energy sources are used to generate electricity.

Non-renewable sources include coal, petroleum, natural gas and uranium; renewable sources include biomass and hydro, wind, solar and geothermal power.

Figure 2: Vertical Integration in Electricity



The supply of electricity also has a unique economic characteristic which limits the extent to which decentralised market mechanisms can replace vertical and horizontal integration.[47] The independence and complementaries between generation and transmission result in economies of scale and scope.[48]

Transmission and distribution are quintessential natural monopolies.[49] The reason for this is because it entails largely fixed costs, and competition would lead to wasteful duplication of networks

There is a very wide range of possible electric utility restructuring models. The author will describe three of many possible options. Model 1 sits at one extreme.

[47] Joskow (2003a).
[48] This is the main reason the industry evolved with a vertically integrated structure.
[49] Technological changes are weakening these characteristics.

In this model one simply supplements the existing industry with the competitive acquisition of all new generating plants. Model 2 is an intermediate restructuring option that creates a fully competitive wholesale generation sector. In this approach all generation would be subject to competition regardless of vintage. Model 3 is a fully competitive retail and wholesale model. All generation services would be competitive from the generation to the retail consumption level.

In this model only the transmission and distribution system would continue to have any form of regulation. These options share a few common attributes. First, they all have, to varying degrees, competitive generation markets. As a result the structures and institutions necessary to support and facilitate a competitive generation market such as an efficient spot market must be designed and put in place. Second, they all have aspects of a continuing monopoly transmission and distribution system. Third, all options are based on arm's length transactions between any regulated and unregulated business.

Electricity markets can be structured in four ways, reflecting varying competition and customer choice.

(i) *Monopoly* – the traditional status quo, where a single entity generates all electricity and delivers it over a transmission network to distribution companies or customers.

(ii) *Single buyer* – where a single agency buys electricity from competing generators, has a monopoly on transmission, and sells electricity to distributors and large power users without competition from other suppliers.

(iii) *Wholesale competition* – where multiple distributors buy electricity from competing generators, use the transmission network to deliver it to their service areas under open access arrangements, and maintain monopolies on sales in their service areas.

(iv) *Retail competition* – where customers have access to competing generators, directly or through a retailer of their choice, and transmission and distribution networks operate under open access arrangements (Table 1)

Table (1): Options for the Structure of Electricity Markets

Feature	Monopoly	Single Buyer	Wholesale Competition	Retail Competition
Competing generators?	**No**	**Yes**	**Yes**	**Yes**
Choice for retailers?	**No**	**No**	**Yes**	**Yes**
Choice for customers?	**No**	**No**	**No**	**Yes**

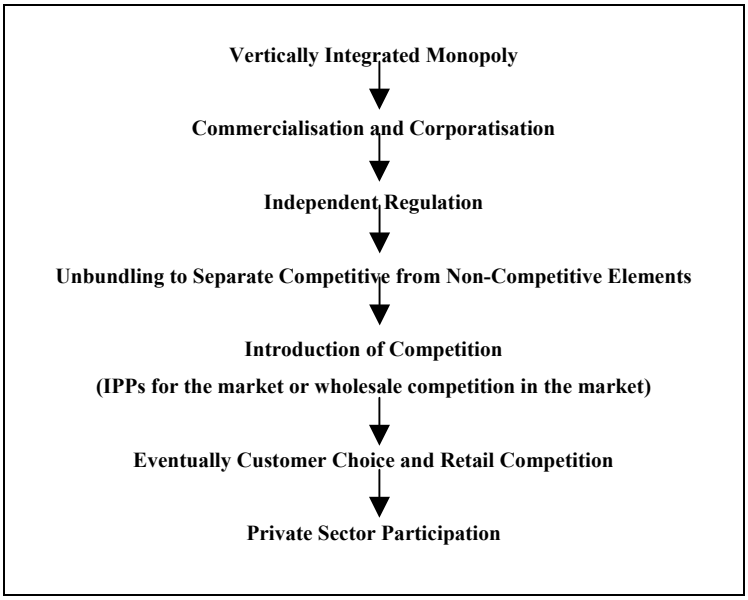
Source: Hunt and Shuttleworth (1996).

Since the monopoly option does not allow for competition in generation, it is largely a straw man today: no one would choose it to promote the public interest. The standard reform model separates transmission, distribution, and system operations from the competitive activities of generation. Wholesale and retail competition are the standard prescriptions, with a regulatory agency setting tariffs for transmission and distribution[50] and market entrants building new generation capacity with non-discriminatory access to the grid and customers.

[50] Joskow (2003a).

The international trend of electricity reform will thus look as Figure 3.

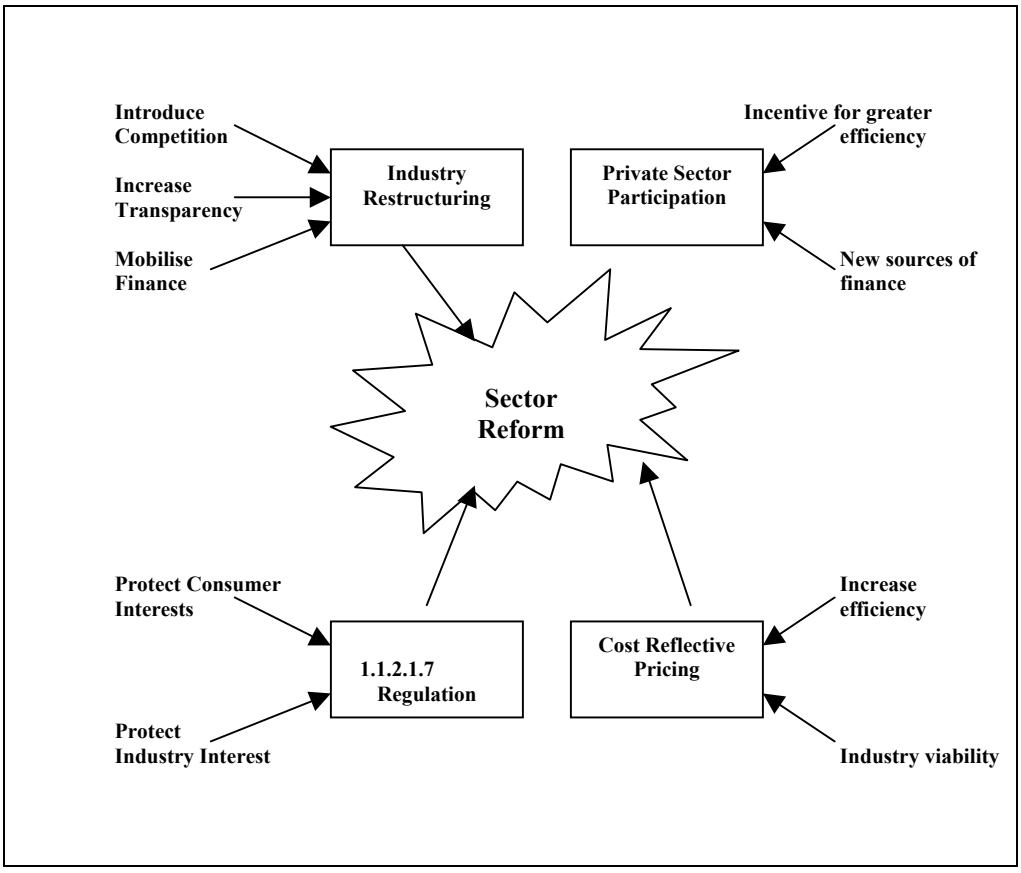
Figure 3 Reform Trends



Source: Eberhard (2001)

Most reforms that have been undertaken involve a package that comprises a mixture of the aspects as indicated in Figure 3, although this may vary from country to country. Hence, the importance of understanding both the categories and the process that reform will normally follow (see Figure 4) as well as the model or reform options chosen. Single Buyer and Wholesale Models will be examined in details because of their relevance to the reform initiative in Namibia.

Figure 4: Process of Sector Reform



Source: World Bank Report, September 1999

3.3 The Single-Buyer and Wholesale Competition Models

A key challenge concerning commercial arrangements in reformed electricity industries in many countries concern the design of the models that will meet both economic and social objectives. .

3.3.1 Single-Buyer Model (SBM)

- The SBM is the most commonly adopted market structure in the developing countries since the 1990s. It is often used as the first step in restructuring with subsequent plans to introduce competition. There is no universal form of the SB Model.

Some writers argue that the SBM provides the means for private Investment to save public funds that may otherwise have to be used in construction of power plants.

Under the SBM, an independent TSO may be created. The term "independent" is meant to reflect the fact that the TSO must not have ownership interest in any generation or transmission company and shall treat all suppliers equally and by the same set of participation rules and standards. The TSO acts on the behalf of all customers and is provided the exclusive rights to buy and sell energy to the distribution company, who, in turn, sells it to the customers. The consumers are then charged for the purchase price of electricity along with transmission and distribution costs. The TSO may procure energy either through the implementation of further steps in restructuring. **This is graphically illustrated in Figure 3.**

The SBM has been adopted by Hungary, Moldavia, Bulgaria, Slovenia, Lithuania and India. Other business models are also possible, where the TSO actually owns the transmission system.

The adoption of the SBM in developing countries has been subject to criticism for a number of reasons. These include: lack of transparent, solid institutions and low payment discipline; the fact that the TSO may not have proper incentive to buy energy from the most economical resources and may exercise favouritism. The World Bank and recent EU directives do not favour the SBM.

3.3.1.1 Advantages of the SB

For the proponents of the Single Buyer Model its popularity is contained in the number of technical, economic and institutional factors. These are:

(a) Due to the fact that electricity needs to match demand, in real time it requires balancing of differences between planned and actual output of individual generators, and between the planned and actual requirements of distributors. Since in most cases the system operator acts as an SB, the balancing is then facilitated.

(b) Electricity flow follows the law of physics and has no regard for contractual arrangements. This is usually a problem for market models with multiple buyers and sellers. The SB model solves this problem without requiring a regime for third party transmission access.

(c) Because it preserves a key role for the sector Ministry in decisions on investment in generation capacity, and for the state-owned electricity company in the sector's day-to-day affairs, therefore it tends to be favoured by influential players.

(d) The SB model helps to maintain a unified wholesale electricity price, thereby simplifying price regulation. It makes it possible for the generation financier to be shielded from market risk and retail-level regulatory risks, thereby reducing financing cost or making the investment commercially bankable.

(e) The SB model appeals to the populist instincts of politician reluctance to support the State's complete withdrawal for electricity trading, it is simple and has minimum costs, and facilitates design of equitable bulk supply tariffs.

(f) It adds capacity quickly without the need for major sectoral reforms, and can reduce generation costs if bid competitively.

(g) Planning for capacity additions and strengthening of transmission systems are better coordinated; it is the only way in which IPPs can be invited to tender for a long-term PPA.

(h) Under economic stress, it is flexible enough to allow a re-negotiation of contract terms, as splitting of existing contractual agreements with generation companies is not necessary.

3.3.1.2 Possible Disadvantages of the Single Buyer Model

Lovei and Estaché argue that the model has a major disadvantage, especially in countries with weak or corrupt governments and low payment discipline due to the following reasons:

*First*ly, decisions about adding generation capacity are made by Government officials who do not have to bear the consequences of their actions. In countries where investors found Government assurance comfortable and attractive, the apparent reason being that Government officials found it difficult to resist powerful interest groups pushing for State-guaranteed capacity expansion.

Secondly, power purchase agreements create a contingent liability for Government, which is expected to step in if the State-owned transmission company is unable to honour its obligations to a generator. Unless managed prudently, these contingent liabilities (explicit or implicit) could put the

Government's creditworthiness, and ultimately macro-economic stability, at risk.[51]

Thirdly, the SBM responds poorly when electricity demand falls short of projection. Ideally, electricity prices would fall, stimulating demand, and revenue losses would be allocated to private financiers best equipped to manage market risk. Under the SBM, however, wholesale electricity prices rise because take-or-pay quotas (or fixed capacity charges) must be spread over a shrinking volume of electricity purchases. When these high prices cannot be passed on to final consumers, taxpayers must bear those losses.

Fourthly, the SBM may hamper the development of cross-border electricity trade by leaving it to the SBM, particularly a State-owned company who does not have a strong profit motive. This could become a major disadvantage when neighbouring countries adopt a less restrictive market model.[52]

Fifthly, the SBM could weaken incentives for distributors to collect payment from customers, particularly if the single buyer is State-owned. States may often be reluctant to take politically unpopular actions against a delinquent distributor, and its aggregation of cash proceeds from distributors may allow it to spread the shortfall caused by a poorly performing distributor among all generators.[53]

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[51] The cash-based budgeting typically used in developing countries sometimes or often hides the fiscal exposure associated with these guarantees, thereby creating perverse incentives that distort the Government's decision-making.

[52] Professor Eberhard argues that the developments in the South African ESI could have a significant impact on the choice of the SB as a market model. Firstly, the size of the South African market, which is 100 times larger than the Namibian market, will change even the way electricity is traded on the SAPP. Secondly, he believes that the security of supply concerns that underpinned the desire to encourage IPP and therefore necessitated the SB would be significantly ameliorated. He argues further that IPP developers may favour a different contractual agreement other than being restricted to a SB. Review of the SBM, unpublished paper for NamPower, 12th September 2003.

[53] This equal treatment of paying and defaulting distributors may weaken the performing distributors' motiviation of cutting off non-paying customers.

Sixth, the SBM makes it easy for Government to intervene in the dispatch of generators and the allocation of cash proceeds among them so that few will be able to resist the temptation. In countries with high levels of corruption an equally important concern remains the temptation of diverting cash to fund illegal or undesirable purposes such as political campaigns.

Finally, the SBM may increase the likelihood that, under pressure from vested interest, the Government could indefinitely delay the next progression towards a fully liberalised electricity market as properly envisaged.

A further argument by the critics of the SB model is that in countries with the growing demand, a Single Buyer model can be a bottleneck to dynamic growth. Hence, the argument that a better option would be to allow generators to sell directly to distributors and large customers, thereby eliminating most of the disadvantages of the Single Buyer.

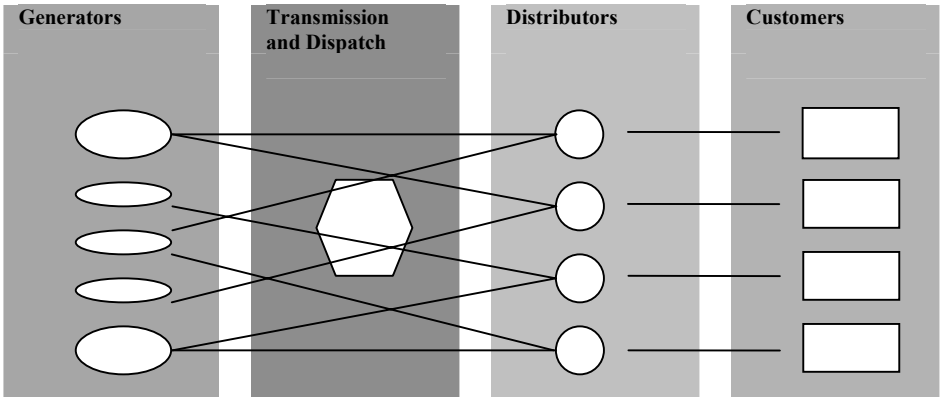
The arguments against the model appear to be more of an administrative political environment, legal and institutional nature, rather than on the model itself. No empirical evidence could be found which prove that the SBM is defective as a model for transition; on the contrary, there seems to be more merit than de-merit in favour of the SBM as a transitional model, provided the size of the market is big enough.

3.3.2 Wholesale Competition Model

Hailed as a development towards greater competition with wholesale competition, local distribution companies retain their exclusive service territories and buy power from competing generations (Figure 5). Customers cannot choose their suppliers, but users consuming more than a certain volume of power may be able to contract with generators.

By allowing wholesale customers to buy cheaper power from alternative suppliers and by providing more customers for independent power producers, this option makes the market more competitive and dynamic than does the single buyer model.

Figure 5: The Wholesale Competition Model for Electricity



Source: Lovei (2000)

Wolak (2003) maintains that several prerequisites must be met for wholesale electricity markets to be successful. First, buyers must have a spot market or electricity exchange where buying and selling occurs. Second, a competitive wholesale market requires a sufficient number of unaffiliated suppliers. Competitive entry is inhibited if a single supplier dominates the market. Third, there is a need for active participation by as many customers as is economically feasible, both in the long-term and short-term markets. Fourth, wholesale electricity markets require an economically reliable transmission network with adequately capacity. Finally, there is a need for a credible, fast acting regulatory mechanism to deal with flaws in the market design and encourage efficient behaviour by participants.

The main features of this model are: end customer has no choice of supplier but must purchase from the local supplier[54]., generators compete to supply energy either through bilateral contracts or spot markets; distributors have a choice of suppliers and can choose to purchase from any generator; and non-discriminatory third party access must be guaranteed.

3.4 Sequencing of Reform

Privatisation (optional where privatisation is feasible and desirable) should preferably start with distribution. It has nevertheless been proven that it is possible to reform and introduce competition in the ESI while keeping the bulk of the sector in public ownership.[55]

3.5 Conclusions

The study established that there is no optimal or ideal regulatory model. For Namibia it remains to be seen whether under all the circumstances and conditions prevailing, the choice of the SBM in transition will be able to meet the issues and problems at hand and whether the legal and regulatory framework are adequate to address the model. To analyse that, recourse must be had to the reform experiences within the region to which the author now turns.

[54] The possible exceptions to this are large consumer such as smelters or mines.
[55] Eberhard (2000); Murray (1998).

CHAPTER 4
OVERVIEW OF INTERNATIONAL AND REGIONAL ELECTRICITY SECTOR REFORM AND ITS RELEVANCE TO THE REFORMS IN NAMIBIA

4.1 Introduction

Dramatic changes are occurring in the electricity sector many states. Reference in this Study shall be made to USA, Sweden, Norway, South Africa and United Kingdom.

4.2 The United States of America

The United States of America always has the existence of both privately-owned and public utilities. Objects of the reform were intended to create an environment for increased private sector participation. Although it was termed 'de-regulation', the regulatory framework sought to reduce prices, increase efficiency and eliminate undesirable practices in the market. An important consideration in the USA was the protection of the environment building in safeguard for the welfare of customers and investors, and realisation of open transmission access which is seen as the key to enabling generation competition. Independence of the regulatory bodies was seen as crucial, hence the Federal Regulatory Commission (FERC) as well as state regulators which are independent.[56]

4.3 Sweden and Norway

[56] Murray (1998); Joskow (2003); Newberry (2000).

Public ownership of utilities still exists in Sweden and Norway, but there are competitive markets in generation and distribution. Private generation accounts for only 15%.

The reforms that have taken place recognise that the electricity market as currently structured is efficient. However, there is a need to design a legal and regulatory framework which guarantees the effective use of resources and takes into account customer needs and requirements. The objective of reforms in the legal and regulatory framework has been to effect a rational utilisation of resources and give customers "flexible delivery at lowest terms". The reforms have resulted in well-defined business units with a focus on profitability and cost reduction.[57]

4.4 The United Kingdom

Power sector reforms started in the early 1990s and the major aims of the reform programme were to: reduce the risk faced by investors through the introduction of competition; have access to private sector financing for power sector investments; attract private capital by reducing economic risk; reduce the role of government in industry; increase the role of the customer, and increase efficiency of nationalised industries.

Significant reforms were made in the legal and regulatory framework to promote competition. In undertaking the power sector reforms, the United Kingdom had a number of advantages in that the industry was mature (100% electrification had been achieved) with established infrastructure and unutilised excess capacity. The UK experience has shown that it is in the distribution sub-sector that the highest efficiency gains can be made[58].

[57] Murray (1998); Newberry (2000); Besant-Jones (2001).
[58] Murray (1995).

4.5 South Africa

The reason for choosing the SAPP and South Africa is because Namibia, as a member of the SAPP and the interconnected nature of the networks as well as the dependency of Namibia on South Africa, will be impacted by any reforms or changes occurring in the country and the Power Pool. The pre-reformed industry structure and governance as well as the governance of the South African ESI was (and still is) dominated by Eskom[59], a dominant vertically integrated state-owned enterprise. Eskom accounts for 96% of generation, 100% transmission and 60% distribution.[60] There are about 400 municipal distributors serving a greater majority of the population. The industry is characterised by an oligopoly in generation and a highly fragmented distribution sector.[61]

Governance of the ESI is the responsibility of the Department of Minerals and Energy (the DME), while the reporting function for Eskom goes to the Department of Public Enterprises (the DPE). The Department of Provincial and Local Government is the line Ministry for local governments and municipalities.

A regulatory body, the NER, has been established as a prerequisite for successful reforms in the power sector. It issues licences for generation, transmission and in certain areas for distribution. It approves electricity tariffs. The NER was primarily formed to protect consumers and to improve the quality of service.

[59] Eskom is the largest utility in Africa and the 5th largest in the world.
[60] Hansen (2000).
[61] Eberhard (2000).

The NER is a distinct regulatory entity with institutional separation. Its regulatory independence is limited to certain areas with key policy decisions taken by the DME. Thus, there is ministerial involvement. In terms of powers, legislation does not correspond with current sector issues; however, it functions, despite unclear policy directions. The regulatory jurisdiction of electricity is shared between the NER and the Competition Commission. The financial independence of the Board is limited. The Minister appoints the Board, including the CEO. The functions of the NER take an informal consultative approach and public hearings are limited mostly for Eskom tariff structure decisions.
Appeal arrangements are on process to the court and on substance to the Minister.

In May 2001, Cabinet approved proposals for the reform of the ESI through a "managed liberalisation" process, the elements of which are summarised below:[62]

1. *Structure of the generation industry*. Eskom is expected to retain no less than 70% of the existing electricity generation market, with privatisation of the remainder and the initial aim of transferring 10% to black economic ownership by 2004.

2. *Vertical unbundling*. To ensure non-discriminatory and open access to the transmission lines, a separate, state-owned transmission company will be established, independent of generation and retail businesses and with ring-fenced transmission system and market operation functions.

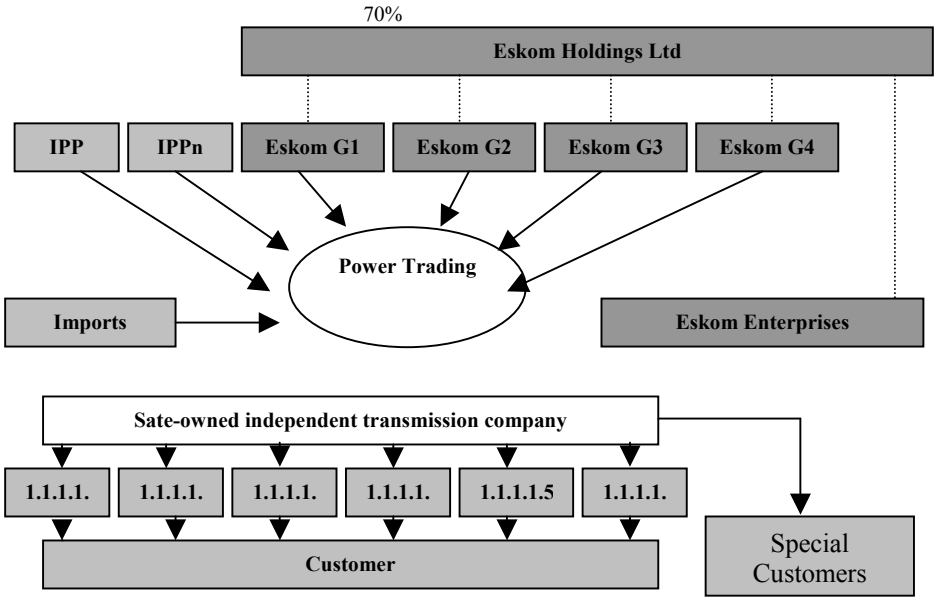
[62] Media Briefing by Minister Phumzile Mlambo-Ngcuka, Pretoria, 3 July 2001.

Initially this company would be a subsidiary of Eskom Holdings and would be established as a separate, state-owned transmission company before any investments are made in generation capacity.

3. *Market structure*. Over time, an electricity market framework based on a multi-market model, will ensure that transactions between electricity generators, traders and power purchasers take place on a variety of platforms, including bilateral deals, power exchange and a balancing market. The EDI shall be rationalised in six Regional Electricity Distributors (REDs).

4. *Regulation*. A regulatory framework will be put in place that ensures the participation of IPPs and the diversification of primary energy sources.

Figure 6: Likely ESI Model in 2004



Eskom generation subsidiaries with open access and trading

Figure 6 depicts the possible structure of the ESI in South Africa by 2006 if Cabinet finally approves the agreement reached between the departments of Public Enterprises and Minerals and Energy, the NER and Eskom.

Many still fear that competition and privatisation will lead to higher prices and the elimination of subsidies for the poor. Eskom has played in important development role in bringing electricity to more people. Prices are currently low, because there has been no need for investments in new capacity for many years, and the cost of the older plants has mostly been amortised. Prices will have to rise to fund the next wave of new capacity, expected in 2007 and beyond[63].

[63] The power systems in Africa record total system losses sometimes exceeding 30%, while the international standard is between 10 – 12%. In South Africa, system losses are close to international standards (8.2%). When a line is too thin, energy is lost in terms of heat because of high pressure, and this is referred to as a technical loss. This results in low reliability and electricity shortages and frequent power interruptions coupled with capacity constraints resulting in load shedding.

All these lessons experienced have relevance to the reform process and agenda in Namibia as will be seen in the next chapter.

A number of countries in the region also have operating IPPs with some operating transmission lines[64]. The major problem in Sub-Saharan Africa is underdeveloped power markets with inadequate generating capacity. The major driver for power sector reforms are the low electrification rates, inadequate generation capacity to meet demand and the inability of the economies to finance the required investments.

4.6 Low Levels of Private Investment

African governments have neither been able to finance the expansion nor the refurbishment of the electricity sector. According to the SAD-ELEC Report (1998), there are three questions regarding the participation of the private sector in the Namibian ESI: firstly, whether the private sector should be encouraged to develop generation resources in Namibia; secondly, whether NamPower should be privatised, and if this is the case, in what manner and on what terms and thirdly, whether the private sector should be encouraged to participate tin the distribution sector, which it is believed will include the introduction of improved management, access to new sources of capital and possibly introduction of new technologies.

4.7 Failure to Supply Rural Areas

In most African countries, the provision of electricity is largely confined to the urban areas. Urban electrification levels are still well below 50%.[65] Statistics show that even in urban areas, with the exception of Zimbabwe and South

[64] Some countries have one national vertically integrated national utility, while others have one national vertical utility and a publicly owned authority that sells bulk to the main utility. Others have a multitude of service providers in the distribution sector in addition to the national utility.
[65] AFREPREN (2001).

Africa, the percentage of households served with electricity is still small. Household electrification is especially low in the rural areas of SSA, and yet the majority of the population in Africa (80%) resides in the rural areas. For instance, rural electrification levels in Malawi, Mozambique and Kenya are just 0.05%, 0.7% and 2.0% respectively.[66]

4.8 The Southern African Power Pool (SAPP)

The Southern Africa region has a rich abundance of commercial energy resources, but they are distributed unevenly. Inadequate energy transportation facilities, such as transmission lines, have been cited as a major constraint to energy sector development in South Africa. Regional and sub-regional cooperation and integration in energy services can help to create a viable export sector and promote economic growth. SAPP is a classical example of such corporation. SAPP was established in 1995.

It consists of 12 SADC member States; utilities are divided into two categories: operating members (those with interconnected networks and trading with each other) and non-operating members (whose networks are not connected). Harmonisation of the legal and regulatory institutional and pricing framework in SAPP will become imperative. This constitutes a major challenge for the Regional Electricity Regulators Association (RERA) to take up. The SAPP policies serve as important guidelines in the national reform process.

There is a further dilemma compounded by the fact that only five out of the twelve countries have established regulators. The legal systems within SADC vary from Roman-Dutch law, English law to French law, and the issue on which law to choose as a working law becomes prominent.

[66] AFREPREN (2001). Namibian Vision 2030: Policy Framework for Long-Term National Development (Main Document), 2004 at page 49 states: "Most people in rural areas live in sub-standard housing and lack of access to electricity"

Regional cooperation within the reformed ESI is important in that it will enable smaller markets such as Namibia, Swaziland and Malawi, amongst others, who are too small for sustainable stand-alone competitive wholesale markets to be part of a bigger regional market, thereby diversifying their energy mix through regional competition other than national competition in generation.[67]

4.9 Regulating the ESI Regional Perspective

The countries in the region have almost followed the same pattern in the regulatory reform process. The Electricity Acts or their equivalent governs the ESI in most SADC countries. These instruments in general: establishes power utilities; deals with the framework for generation, transmission and distribution of electricity; defines functions of power utilities; refines role of the utility board and its appointment; provides for the functions and powers of Regulatory Boards; and defines powers of the responsible Minister.

It is worth noting that in the Democratic Republic of Congo (DRC) there is no Electricity Act or similar legislation providing for a legal or operational framework in the ESI.

The Electricity Acts also define how the power utility Boards are appointed and their functions. The Board of Directors of Electricity parastatals are appointed by government.

The period of office, terms and conditions of appointment of the chairman and other board members is determined by government. In Malawi, ESCOM board members are appointed by government and government can dismiss them at will. In Uganda, according to Mugyenzi (1999) government, through the Minister

[67] Aldrich (2000); SAD-ELEC (1998); SAPP website.

responsible for energy, appoints members of the utility's board of directors and sometimes the people appointed are not the most suitable.

The Electricity Acts in Southern Africa and in Europe provide for licences to be issued by the Minister. This is the case in countries where electricity regulators are not yet in place and by electricity regulators in countries where they have been set up and subjects are licensees to the regulatory framework set out in the Act.

The Electricity Acts also establish regulators. In Southern Africa the following states have regulators in place: Zambia (Energy Regulatory Board), South Africa (National Electricity Regulator), Malawi (Electricity Council) and Namibia (the Electricity Control Board).

The Electricity Acts give the responsible Minister and Regulators powers to revoke licences in cases where the licensee fails to meet its licence obligations. The Acts also set out the powers of licensees with regard to servitudes, wayleaves, expropriation and rights of inspection.

Government's role will focus on policy making and guidance on investment priorities through licencing, whilst regulatory and enforcement responsibilities are undertaken by a regulatory board. In Uganda, the Electricity Reform Act was passed in 1999 and opened up the ESI for private investment and multiple operators.

The present legal and regulatory framework in many countries where electricity regulators are not yet in place is characterised by government control, e.g. in areas such as pricing, capital budgets and the decision making process. Changes in the Electricity Acts in the region have been brought about by the poor

financial performance of the ESIs and pressure from the major financial institutions like the World Bank. The Regional installed capacity and the current ESI structures appear below in the Tables 2 and 3 respectively.

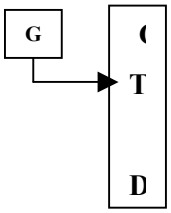
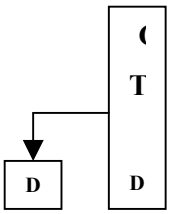
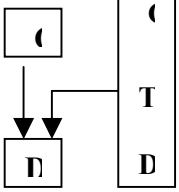
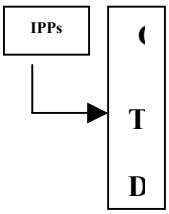
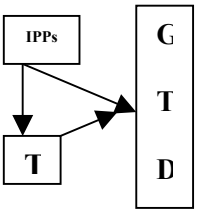
Table 2: Regional Installed Generating Capacity (mw)

Country	Hydro	Coal	Diesel	Nuclear	Geothermal	Total Capacity
Swaziland	41	-	10	-	-	52
Lesotho	75	-	0.84	-	-	76
Botswana	-	132	-	-	-	132
Malawi	284	-	21	-	-	305
Namibia	240	144	3	-	-	387
Tanzania	562	4	336	-	-	902
Zambia	1.632	-	9.75	-	-	1.642
Zimbabwe	750	1.295	-	-	-	2.045
Mozambique	2.184	-	199	-	-	2.383
South Africa	2.061	37.678	342	1.930	-	42.011

Source: SAPP Website

Table 3: Current Electricity Supply Industry Structures

Source: Le Roux (2003).

Countries with one national vertically integrated utility	Countries with one national vertically integrated utility and a publicly owned authority that generates and sells bulk to the main utility	Countries with one national vertically integrated utility but more than one distributor company	Countries with one national vertically integrated utility but more than one distributor company	Countries with one national vertically integrated utility and which operates IPPs	Countries with one national vertically integrated utility but where the IPP owns and operates part of the transmission
					
Malawi Swaziland Botswana	Lesotho	Namibia	South Africa	Zimbabwe Tanzania	Zambia Mozambique

Electricity sector reforms especially in Southern Africa appear to have been concentrated more on alleviating generation capacity shortfalls than on serious deficiencies in the distribution sector.[68]

[68] AFREPREN (2001).

CHAPTER 5
ESI REFORMS: THE CASE OF NAMIBIA

5.1 Introduction

Namibia has been intensely examining its ESI for nearly eight years to determine if and how it should be reformed to support the economic development and social upliftment goals. There is consensus on what is expected of the industry, namely to provide adequate, reliable and affordable electricity services to all citizens and segments of the economy. This means a large-scale electrification programme to reach a significant portion of the nearly 50% of the households currently without electricity services within the next five years. It also means tariff reform to promote equity and efficiency, and upgrading the reliability and service quality now being provided to some of the consolidated local authorities.[69] However, no consensus existed (still does) on how best or with what market model to achieve these results while accounting for time and resource constraints and balancing the interests of the various parties.

- The EDI is fragmented, inefficient, and thus costly. It must be organised or rationalised in some way to ensure sustained financial viability, and to meet its responsibilities.

- Electrification is a critical infrastructure development activity that must be implemented. Electrification currently depends on cross subsidies, and will continue to do so for some time. The recurring cost of serving newly connected, low-usage customers is the most critical financial burden.

[69] In 1990 most local authorities created before Independence, combining formerly white and black municipalities/townships. The local municipal authorities had the right/responsibility to provide services within their areas of jurisdiction. In rural areas outside the municipal boundaries, NamPower (then SWAWEK), the national utility, had the right/responsibility to supply.

- Hidden cross subsidies should be eliminated or drastically reduced and tariffs should be cost based.[70] Electrification should be supported through a transparent tax on suppliers or a levy on sales (surcharges).

- High dependency of the country on South Africa, therefore security of supply becomes important.

- The present approach to electrification of setting only numerical goals is wasteful, inefficient, and does not promote economic development effectively, or provide an equitable provision of basic service.

- Separating the three components of the industry – generation, transmission, and distribution – then introducing competition in supply at the wholesale level in the future may promote cost savings and economic efficiencies, however as to how quickly competition is encouraged is a matter of debate.

Given the subsidies needed to accomplish electrification and the serious lack of service provision, and financial problems with many municipalities a model is being sought that produces cost reductions to offset subsidies and improves the financial health and performance of the EDI. There are competing models of the EDI structure. They range from highly centralised to moderately decentralise.

5.2 Historical Background: Structure of the Namibian ESI

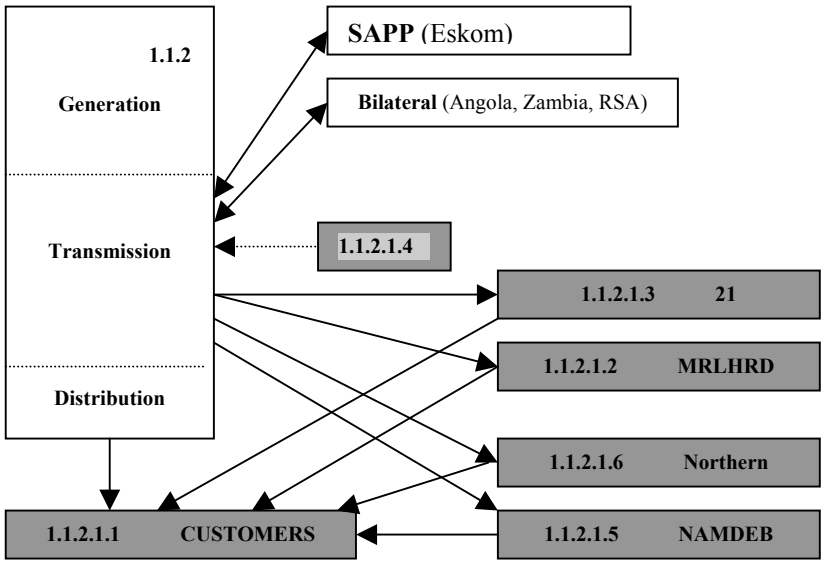
One of the biggest challenges in Namibia is providing increased access to electricity to a greater majority of the population.

[70] MME Restructuring Study (1998).

The dominant trend in the evolution of the ESI in Namibia over much of the last thirty years was the growth and consolidation of a large and powerful state-owned vertically integrated monopoly.

NamPower (then SWAWEK) was established in 1970 as a private company incorporated under the Companies Act, No. 23 of 1973,[71] fully owned by government and given the mandate to generate, transmit and distribute (outside municipal areas) electricity throughout the whole country. NamPower, therefore, owned and operated all the generation stations and high voltage transmission lines. Distribution was a function of ±35 municipal and local authorities, the Ministry of Regional and Local Government, Housing and Rural Development (the MRLHRD), and NamPower in areas where there are no municipal or local authorities. The setup is best illustrated in Figure 7.

Figure 7: The Namibian ESI Structure



Source: Adapted from SAD-ELEC Report (1998)

The governance of the sector is the responsibility of the Ministry of Mines and Energy (the MME).

[71] This is the reason why with reforms NamPower did not have to go through a commercialization and corporatisation process.

However, the Ministry of Regional and Local Government, Housing and Rural Development (the MRLHRD) also played a role, particularly in relation to the local authorities involved in electricity distribution.

The ownership of the ESI was largely a public domain. The only exception was a company called Northern Electricity (Pty) Ltd, which operated the assets of and supplied electricity in the northern region on behalf of the MRLHRD.

Prior to 2000 there was no independent regulation of the ESI. Tariffs charged by NamPower were subject to political oversight by the MME. The local authorities determined the tariffs charged by municipalities subject to the approval of the MRLHRD. This resulted in differentiation of tariffs and services between customers. Regulations of health and safety standards were the responsibility of government.[72]

The country, up to 1998, did not have a comprehensive national policy to help guide or regulate the sector. A static approach was followed where there was no separation of the government's role as a policy maker, regulator and stockholder. Government thus exercised both dual roles of ownership and control.

These arrangements might have served national interest and customers relatively well, however it was only a matter of time before problems arose: particularly those related to the fragmentation of the distribution sector, the problems in the sector (as will be discussed later. On the other hand, while NamPower performed well in all important aspects, its *de facto* monopoly position, its framework and structure was in the eyes of the policy maker not conducive to a competitive environment.

[72] The regulation and standards were mostly provided for in different legislation administered by different Government Ministries, MME Restructuring Study (1998).

5.3 Reforming the Sector through Restructuring and Competition

5.3.1 Restructuring for Competition: Namibia's Drivers for Reform

Most analysts identify four broad drivers for power sector reform internationally.

First, there is the desire to improve investment and operational efficiencies that blight the performance of monopoly utilities. Second, technological innovations – particularly in efficient, less capital-incentive generation plants and in new information and communication technologies (ICTs) – make it possible to organise the industry so that new entrants can compete more easily. Third, the need for massive new capacity expansion results in increased demands for finance that is not readily available from public sources and forces greater reliance on private sector involvement. Fourth, restructuring and privatisation create opportunities to unlock economic value and reduce government debt[73].

Under-pricing was common in electricity. The main cause of deteriorating infrastructure performance was under-investment, which was largely due to the failure of governments to prescribe cost-reflective tariffs, especially during periods of high inflation. Under state ownership, prices fell to levels that could not cover the investment needed to meet growing demand. But years of under-funding and failure to address systematic problems led to a significant infrastructure deficit in the developing world, generating substantial welfare losses. Infrastructure inefficiencies constrained domestic growth, impaired international competitiveness, and discouraged foreign investment.[74]

[73] Murry (1998); Joskow (2000); Eberhard (2002).
[74] Joskow (2000).

According to the NamPower 2001 Annual Report, the unit cost of electricity sold to customers over the years has been declining in real terms although it does not reflect the cost of supply. In an attempt to make the prices reflect cost of supply, tariff adjustments were effected on 1st July 2000.

Analysts and a small minority of officials in Government are now beginning to understand that current prices are economically unsustainable.[75] The challenge is whether the ECB will be bold to raise tariffs at sustainable levels in a manner that will not deter investment in the sector and yet protect consumers.

Many stakeholders believe that NamPower operates efficiently. Public finances are relatively well managed and at this stage it appears that the National Treasury does not have a desperate need for privatisation receipts. Yet, a deeper analysis of the challenges facing the ESI in Namibia revealed issues that needed to be addressed and which progressively drive the reform process. These drivers will have to be looked at from two perspectives, namely the electricity distribution sector (EDI) and the electricity supply sector (ESI).

[75] Electricity Tariff Study (2000). Section 25 of the Electricity Act of 2000 provides that "a licence many not levy any charge against any customer other than in accordance with the tariffs specified in the schedule of approved tariffs contained in the licensee's licence".

5.3.2 The EDI

The distribution sector it can be summarised as follows:

- *Financial Viability*: The EDI is in a financial crisis – there was financial collapse of many municipalities which face severe debt problems including a backlog of non-payment to NamPower. In many instances government has to step in to rescue the situation. Investments in the distribution networks were also falling significantly short of the required levels to maintain assets and to extend the network to meet growing demands. As a result, government's objective of securing electricity for all is placed under threat.

  The inability of many of these distributors to meet financial demands has the potential of placing the electrification programme under serious threat.

- Also, many of the financially weak distribution businesses do not represent secure employment prospects for their labour force. This in turn is creating pressure on many skilled staff to leave the industry for more secure employment elsewhere, as well as significant uncertainty and concern among other members of the current labour force.

- *Inadequate treatment of Consumers*: Most structural arrangements in the EDI are a result of historical accident and form no coherent pattern. This has resulted in consumers facing different tariff levels, standards of supply reliability and

services across the country, resulting in widespread inequality among consumers.

- Wide disparities exist in the tariff structures caused by the high level of fragmentation of the industry (domestic tariffs supplied by municipalities range from 50 - 60 c/kWh). These tariff differences bear little or no relationship to the quality of service provided the costs of supply or consumers' ability to pay.

- Reliability of supply and the ability of distributors to offer a basic and secure supply to low-income households differ notably across the country.

- Electrification needs are not evenly distributed across regions, with some of the poorer regions having the greatest need. Under the current EDI structure, the burden of financial support to newly-connected rural and low-income urban customers will fall randomly on some customers and not others in an entirely unplanned and uncontrolled manner.

- The threat of financial collapse is most acute for a number of municipal distributors in certain low-income rural and urban areas.

- *Inefficiencies*: The EDI is currently highly fragmented, with some over 45 distribution businesses, which by international standards are extremely small. As a result, many of the basic economies of scale in the sector are being lost.

Administration and technical functions are duplicated across adjacent distributors in rural, urban and industrial areas. Costs and prices in the sector are, in consequence, unnecessarily high, and will remain so until the number of businesses is reduced radically. The highly fragmented nature also means that:

(i) the EDI is currently very difficult to regulate and monitor effectively;

(ii) it is extremely difficult to attract and retain high quality management teams for such a large number of separate businesses;

(iii) many of the businesses are too small to be able to invest in the specialist skills development and training required of a modern distribution business.

In summary, the current arrangements in the EDI are unsustainable from a financial, efficiency and equity point of view. The need for reform is urgent, if the problems in the current EDI are not to present a significant obstacle to the government's social and economic development programme. Therefore, a single coordinate approach is required.

The electricity distribution industry is an important element in the Namibian economy and has a key role to pay in the government's economic and social development plans. Therefore, the EDI reform outcomes should ideally be:

- to provide low cost electricity to all consumers, with equitable tariff for each customer segment;

- to provide a reliable and high quality supply and service to all customers, in support of the government's economic and social development plans;

- to meet the country's electrification targets in the most cost-effective manner, and so ensure that electrification is contributing to social and economic development;

- to meet the legitimate employment, economic and social interests of all employees in the sector, and ensure their safety; and

- to operate in a financially sound and efficient manner, in order to provide a reliable and sustainable future for both customers and employees.

5.3.2.1 The Electricity Supply Industry (ESI)

In many respects the electricity supply industry (ESI) sector[76] has served Namibia well. NamPower has provided a good quality of supply and has managed to keep tariffs relatively low and stable. This is the reason why there is a perception that the changes being suggested are radical, and beside competition these changes are being suggested because of other driving factors.

[76] For purposes of differentiation, this sector consists of generation and transmission, which is mostly the responsibility of NamPower.

Firstly, Namibia is a global player and must always be looking for opportunities to improve the performance of its key economic sectors. Manifest in growing international experiences, there is a realisation of the following:

- Outstanding technological improvements indicate that all components of the electricity industry are no longer necessarily vertically integrated monopolies deriving significant social and environmental benefits through economies of scale.

- Energy security can be achieved through diversification and flexibility of supply, including increased cross-border energy trade, and those uneconomic energy industries need no longer be protected.

- Government need not necessarily be the provider of public services in order for delivery of these services to be ensured.

These reforms have been driven not only by these international developments, but also by imperatives emanating from within Namibia. On a broader level, the electricity sector reform initiative is part of government's decision to restructure its SOEs. Apart from the objectives as discussed earlier under section 1.2, from the government's perspective the primary objects are to: *Increase economic efficiency; widening resource availability and opportunities for technological change* by considering competitive imports from Southern Africa; facilitate *private sector participation*, especially promoting by opportunities for

> black economic empowerment; Improve *customer service* and introducing choice of supply; and i*ncrease security of supply.* The last mentioned was born from the realisation and recognition of the country's over-dependence on imports, especially on South Africa. This further culminated in the realisation that competition in generation should be facilitated to diversify and broaden energy generation in Namibia.[77]

Two goals must be embedded in the reform process: concerns about future demands, and regulation and competition. Namibia's vision for its electricity sector, like many other countries around the world, has gone from one of exclusive state ownership and control to one of partial private ownership and control.[78] In this regard, one may say that there are typically three main drivers motivating a move towards competition and private ownership in the electricity sector, i.e. (1) electricity prices; (2) service quality and adequacy; and (3) supply/generation capacity.

One may argue that not all three are relevant ESI drivers in Namibia. In the short term, lower electricity prices are not a strong driver since, like its South African counterpart, Namibia's electricity prices are relatively among the lowest in the world.[79]

In the EDI electricity service, in terms of quality, reliability and adequacy, is generally sufficient for those who have it. It is thus arguable that improved services are also not a strong ESI driver. The driver that is strong and motivates ESI reform is the country's need for greater capacity to generate electricity in the future.[80]. We turn to regulation and

[77] White Paper on Energy Policy (1998).
[78] If private participation is realised.
[79] Electricity Tariff Study 1998.
[80] See Table 1, which is the countries installed capacity. In the medium to long term, more capacity will inevitably translate into higher prices. In the future, price considerations may become an important ESI reform driver.

competition. The Namibian situation is complex and connected to a myriad of financial, cultural, political and economic issues.

Thus, while Namibian circumstances like those of its neighbours are affected by global trends, it also reflects the unique Namibian context and needs.

According to the International Labour Organisation (ILO), restructuring and privatisation operate together all over the world and fundamentally imply a redefinition of the role of the State, with a corresponding transfer of ownership, operating and development rights in state-owned enterprises (SOEs), as well as of the associated financial risks, to the private sector. Simultaneously, the state has had to assume new responsibilities in regulating privatised monopolies or in strengthening the social protection that was previously provided by SOEs.[81]

For Namibia, the general thrust was (and still is) to shy away from the British (Thatcher era), former East Block and Latin American approaches dealing with competition and regulation. Namibia, for example, puts more emphasis on the restructuring of the state sector (than privatisation), and where the state remains a majority stakeholder.

Prior to the establishment of the ECB the approach was to use relevant government ministries to regulate specific sectors.

This was considered to be a static approach as, according to Bhagavan (1996), it is unlikely that the State will be able to distinguish clearly its conflicting interests as both Owner and Regulator.

Regulation that provides a credible commitment to safeguarding the interests of both investors and customers – is crucial to attracting the long-term private capital needed to secure an adequate, reliable supply of infrastructure services. Successful reform requires regulation that clarifies property rights, allocates

[81] ILO (1999: 4 – 5).

them sensibly, and assures private investors that their sunken investments will not be subject to regulatory opportunism.

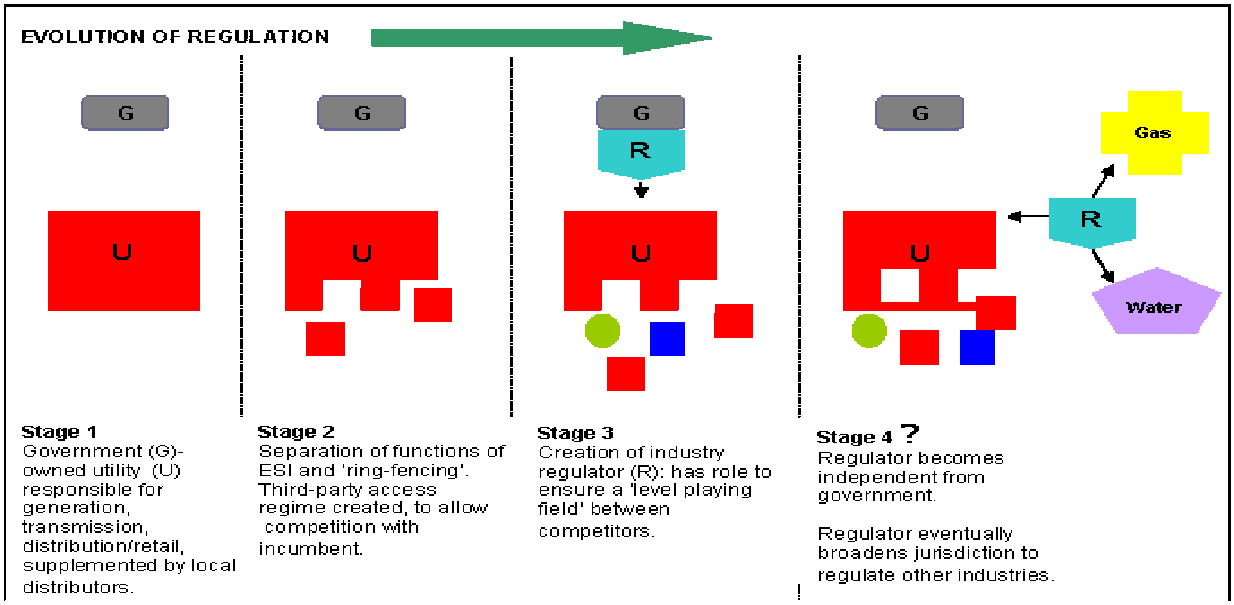
A significant defect of the regulatory mechanism in Namibia was the proliferation of government ministries or bodies involved in regulatory matters. The lack of operating guidelines for most of these government entities involved in regulating the industry, more especially the supervision responsibilities and lack of precise definition, was a major hindrance.

When reforms were introduced, Namibia like the rest of the developing countries had little or no precedents to guide the design of regulatory mechanics.[82] These models were rarely adapted to the political and institutional features prevalent in these economies, including lack of checks and balances, limited technical expertise, weak auditing, accounting and tax systems, and widespread corruption and regulatory capture.[83] As a result, such efforts have had limited successes or failed woefully. Many government entities, especially sector ministers, have resisted giving up their regulatory functions and limiting their roles to policy oversight, development and adjusting policies accordingly.[84]
However, unlike some of its counterparts in the region, Namibia was not forced by the financing institutions to adopt hasty regulatory models.

The legal and regulatory framework (which will be discussed fully in the next chapter) like its African counterparts (with the exception of a few), was mainly designed for publicly-owned and regulated power utilities.

[82] Under pressure from multilateral institutions, investment bankers and financial advisors, many of these countries hastily adopted regulatory templates from developed countries.
[83] Laffont (1996).
[84] World Bank (2004).

Table 4: Evolution of Regulation



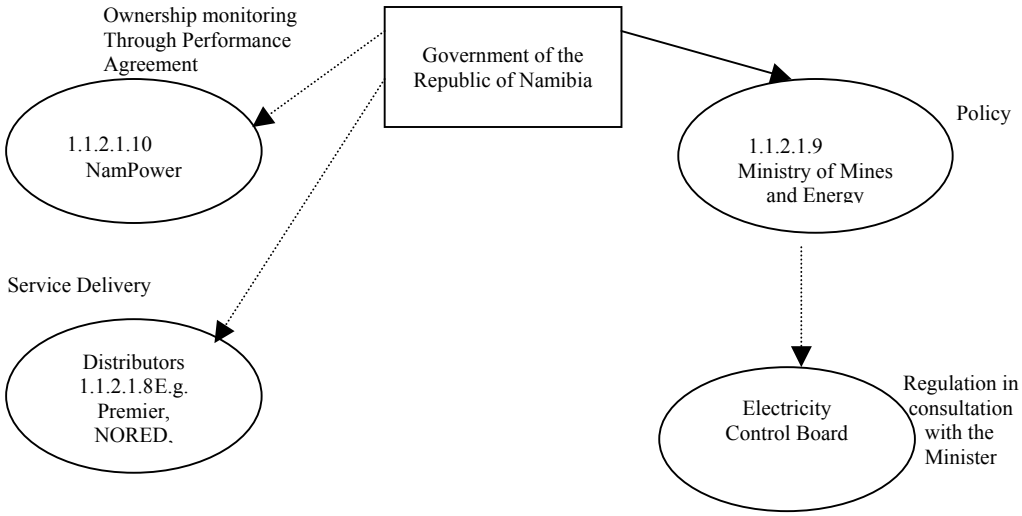
Source: ESI Summit (2003)

The regulation evolves from state-owned monopoly, within the broad and policy set by government being responsible for all aspects of the industry to function of the ESI being separated and the competitive element being "ring-fenced" from non-competitive or monopoly elements. A regime of access to third parties is then created. This regime allows the private sector to enter the industry and compete with the incumbent. The establishment of a Regulator, in order to ensure a level playing field to all participants, represents an evolution where the regulator becomes independent ensuring that the regulatory decision making process is separate from the political decision making process in the market and finally to the state where the regulatory activities of other industries and regulators are consolidated to economise on costs and expertise.

Namibia is at Stage 3 in its regulatory evolution. This means that while there is a Regulator, it is not independent from government and it regulates only electricity.

Figure 8 illustrates the broad policy and regulatory structure of Namibia's electricity supply industry.

Figure 8: Structure of the Namibian ESI



Regulation in an electricity industry traditionally occurs across all key functions of the ESI, but the type of regulation used varies. For example, as electricity generation can be competitively provided, regulation of generation generally focuses on establishing market rules and monitoring stakeholder compliance with them. In contract, as transmission and distribution are considered 'natural monopolies', regulation of these aspects of the ESI are imperative.[85]

5.4 Characteristics of an Ideal Regulatory Framework

In jurisdictions where ESI reform has been carefully designed and implemented, there is a clear separation between policy formulation and the implementation of policy through regulations. The government should guide rather than implement, and regulatory agencies must have powers and obligations to act independently of government to meet their objectives.

[85] ESI Summit (2003).

The experience in Namibia is no different from the other developing countries. Government has allowed the development of the industry to go ahead in the absence of an adequate legal and regulatory environment. For example, for the implementation of private sector participation to be successful, a clearly defined legal and regulatory framework has to be imposed to guide the reform process. Bhagavan (1996) identifies three possible levels of policy and regulatory issues. These are: national private policy, set to determine the level and manner of private participation; policy and mechanisms to regulate private involvement; and implementation policies on competitive and non-competitive solicitation, pricing and risk sharing. One may state that the Namibian regulatory system and approach is characterised by unclear information about who created the policy and who implements it.

While no creation of separate transmission and generation companies has been advocated, ring-fencing of these activities in NamPower, for example, will pave the way for introduction of competition in generation. It should, however, be borne in mind that effective competition and market-orientated arrangements require several generators.

For private investors to find it attractive to compete in the market for existing generation there need to be excess capacity in the system (surplus capacity over demand).

A country such as Namibia faces limitations with regard to the number of firms that can be formed from existing generation capacity. Consequently, this has a bearing on the type of market and competition-orientated solution that will be implemented. But *competition for the market* in generation is certainly a realistic proposition and achievable, given the incidence of shortfall in capacity demand exceeding supply in the country. The hitherto most common approach which is also recommended for Namibia is the introduction of private sector investment into the sector through IPPs. Competition here would be characterised by “trade-

off" between the lowest possible prices for supply on the one hand, and adequacy and reliability of supply on the other.

It is not envisaged to move to retail competition soon. Although empowering the end-user despite its relatively small weight in the supply chain, end-user supply has a disproportionately large importance in getting competition to work for the benefit of the consumers. Rationalisation of the distribution sector is not meant to be a competitive tool. The regional electricity distribution companies (REDs) will only have jurisdiction in the areas where they are licenced to distribute and supply.

Monopolies are typically regulated primarily to prevent the monopolist from charging inefficient prices, not to ensure equity.[86].
Yet, the government institution with the most direct responsibility for the ESI (ECB) states in its 2000 vision for the industry that it wishes to promote both competition, and participation of the private sector in the ESI.

Therefore, despite the Cabinet statement, the debate over centralised and decentralised EDI models, which is partially a debate over the advisability and feasibility of future competition in the industry, is essential. Clearly, if a centralised EDI model is adopted, especially if it is one creating a national vertically integrated utility, moving to competitive electricity supply within the next decade or so will be extremely difficult.

[86] This view of the primary reason and justification for economic regulation is not universally shared. Some would argue that maintaining equity (as in fairness) in the provision and pricing of services is at least co-equal in importance to ensuring economic efficiency through proper pricing. While there is merit in this argument, I believe that since regulation was seen as the second best solution, with competition being the first best, then it follows that if competition is not possible due to the desire to gain the economies possible by allowing only one service provider, regulation is substituting for competition. Competitive markets do not allocate benefits and costs to market participants based on fairness, but rather on efficiency. Price determines efficiency, although some would say that price reflects the level of efficiency in a market. Either way, regulation is intended to mimic market pricing to the extent possible. It is certainly true that other public policy goals such as equity have been given to regulation and regulators over the years. The point here, however, is that the original conceptual basis and justification for regulation was efficiency, not equity.

5.5 The Reform Process in Namibia

5.5.1 The Policy Context

The Namibian ESI supply can be considered to be still on the start of the reform process. Reform implies changes in ownership, structure and regulation of the industry. While ownership is not expected to change much from the public to private domain, structurally the industry will be unbundled both vertically by separating out distribution from generation and transmission (though transmission not as a separate company). Although not breaking up NamPower generation, by allowing other players into generation, NamPower's monopoly on generation will be broken[87].

The foundation for the reform of the energy sector as a whole was laid down in the Electricity Restructuring Study and the subsequent White Paper on Energy Policy as adopted by Government in May 1998.

This new policy framework represented a complete break from the past and became a new paradigm for the development of the ESI. The White Paper on Energy Policy (1998) therefore became the overarching statement of Government which outlines the basic structure.

In response to the challenges, it recommended the restructuring of the broad principles and provisions and stated that "*a study into possible models for restructuring will be completed by 1998. The restructuring* [would] *address reorganisation of electricity distribution, integration of the Namibian electricity industry with the rest of Southern Africa, and the possibility for competition in electricity generation and supply, particularly by encouraging independent power producers to enter the*

[87] Clark (2000:1).

market. This [would] *create an enabling environment for both public and private involvement in the electricity supply industry*".

The White Paper further stated that it would "*ensure the establishment of the necessary legal, regulatory, fiscal and environmental frameworks to create a favourable investment climate*" and that "*this policy will ensure that independent power producers have fair access to the national and local transmission and distribution networks, and that major electricity users have the right to choose the most appropriate and economic source of electricity*".[88]

- Added to that, the Policy establishes the following goals: *Effective governance*, *Security of supply, sustainability and economic competitiveness and efficiency*

  The Government wants to see an improvement in the Namibian ESI in order to bring greater efficiency and profitability, better service and a greater customer orientation. Any future structure of the ESI must facilitate and lead to improved and sustained quality and reliability of supply.

Further, the Government was committed to regional integration, hence its decision that the restructuring will be compatible with the Southern African Region, taking into consideration institutional, sufficient and appropriate electricity governance. These goals can be summed up into four distinct criteria: political, financial, economic and socio-economic.

[88] GRN (1998) White Paper on Energy Policy: MME, p. 21.

A group of consultants, led by the South African Company SAD-ELEC, was appointed to undertake the ESI restructuring study. The first phase, completed in March 1998, evaluated the current performance of the ESI and reviewed relevant international experience. The second phase was completed in July 1998 and evaluated a limited number of possible restructuring options, with particular focus on the realisation of the distribution industry. Following consultation with stakeholders, a third phase commenced in June 1999, which included recommendations for the establishment of a Single Buyer (SB) model as the most appropriate electricity market structure.

Following a draft report in November 1999, stakeholders were invited to provide further comments. Broad-based support was expressed for the proposed Single Buyer model as the basic market structure for ESI reform, with a commitment to move to wider competition in the long term.

The ESI restructuring study concluded that full wholesale competition in generation was impractical in the short to medium term. Accordingly, the SB market model was proposed. This has already been be discussed elsewhere.

5.5.2 The Legal and Regulatory Framework

The legal and regulatory framework may be defined as the formulation and issuance of rules governing the conduct of generation, transmission and distribution of electricity in Namibia. Recently, a number of important regulatory changes have taken place. These changes include the following:

- Redefining of the public utility from a welfare driven Government agency to a limited liability commercial entity and providing for its unbundling and privatisation; and
- Dismantling of the monopoly of the public utility to encourage private participation, specifically in generation and distribution of electricity.

Namibia, like the rest of its counterparts in the region, combined operational responsibility with policy and regulatory rules.[89]

5.5.3 The Institutional Framework

5.5.3.1 Local Authorities

Municipalities are defined by the existence of an approved township and are completely financially and logistically independent from the national Government.

They provide funding for infrastructure and provide a wide range of social services.

The affairs of a municipality are governed by an elected Municipal Council of between seven and twelve members. This Council elects the mayor, deputy mayor, chairperson and vice-chairperson, as well as the management committee.

Towns retain some autonomy for functions such as planning and budgeting, but usually depend on the national Government (through the MRLHRD) for financial support for carrying out their assigned functions.

[89] This is viewed from the point that, although NamPower and local authorities were involved in operations, they were both State or publicly owned which makes it arguable that the State was both the operator (NamPower and municipalities) and the policy maker and regulator (the MME and the ECB).

Villages depend on the national Government for both funding and logistical support. The affairs of a village are governed by an elected Village Council of seven members. This Council elects a chairperson and a vice-chairperson.

5.5.3.2 Regional Authorities

There are thirteen regions in Namibia. The affairs of a region are governed by a Regional Council, whose members are elected on a constituency basis. The Council elects the Governor and the management committee from amongst its members.

Each Regional Council elects two of its members to serve on the National Council.[90] Regions retain some autonomy for functions related to development within their regions.

5.5.3.3 The Ministry of Regional and Local Government, Housing and Rural Development

MRLHRD has traditionally been responsible for providing a range of services to Town Councils and Village Councils. Local governments outside the municipal areas (in towns, villages and settlement areas) have most often not maintained their own finances and have been dependent upon the MRLHRD for financial, and in the case of villages and settlements, logistical support for the provision of all services, those with both a national and a local character.

[90] See. Regional Councils Act No 22 of 1992.

Although the Local Authorities and Regional Councils Act assigned (in 1992) responsibility for electricity service provision to each of the local and regional councils, only the municipalities took on the authority. The MRLHRD continued to provide electricity infrastructure and services to the regional, town and village (and settlement) areas. This includes the provision of the infrastructure, its operation and maintenance, and the collection and disbursement of revenues. System planning and financing are centralised with Ministry directorates at the national level, while operations, maintenance and revenue collection are performed by locally and regionally-based MRLHRD staff.

It is only recently, under the auspices of the Decentralisation Enabling Act, that some town councils have begun taking on some of these responsibilities.

5.5.3.4 The Electricity Control Board

The Electricity Control Board (ECB) is the regulatory authority for the electricity industry. It was established as an Independent Agency by the Electricity Act, 2000 (although its functions are not independent). Its main policy goal is to guide the industry away from a model dominated by a vertically integrated monopoly towards a model fostering competition in generation, distribution and supply of electricity.

There are five Board members[91], each appointed by the Minister of Mines and Energy, with expertise in the electricity industry, law, economics and the environment. The Board members appoint a Chief Executive Officer, who in turn recruits staff members. The ECB issued is first set of licences in October 2001.

5.5.3.5 The Competition Commission

Established under the Competition Act, the five-member Competition Commission has jurisdiction over economic issues which have an interest on or an impact upon Namibia. By implication, competition aspects of electricity will fall under its jurisdiction.

5.5.3.6 The Central Governing Agency

Established by Government in 2003, the Central Governing Agency is expected to derive its powers as a Regulator and overseer of the activities of State-owned enterprises from the State-owned Enterprises Bill, once enacted into law.

5.5.3.7 The Ministry of Labour and Social Welfare

The involvement of this Ministry lies in the fact that the Health and Safety Rules and Regulations are embodied in the Labour Act of 1991 and as a result will fall under the jurisdiction of the Labour Commissioner and the Minister of Labour and Social Welfare.

[91] Analogous to what in other countries are often called 'Commissioners')

5.5.3.8 The Ministry of Environment and Tourism

Although there is no environmental legislation in place, the environmental guidelines for EIAs fall under the Ministry of Environment and Tourism.

CHAPTER 6
LEGAL AND REGULATORY FRAMEWORK: DEVELOPMENTS, GAPS AND CONTRADICTIONS

6.1 Introduction

The transition from the old to the new regulatory regime poses a major challenge for policy makers. Regulatory uncertainty during or immediately before the transition have an impact on the operations of the industry.[92] In Namibia it was realised right from 1998 that the legal and regulatory framework was inappropriate and incapable of promoting reforms, competition and private investment.

The framework needed should spell out the roles of all stakeholders and set out clear and transparent criteria and procedures for approving, for example, entry and exit of private sector actors, and state unambiguously the proportion of ownership preferred by domestic and foreign capital.

6.2 The White Paper on Energy Policy of 1998

The White Paper on Energy Policy laid down the foundation for the reform process. It therefore became the overarching statement of Government policy. The Policy outlined the basic regulatory structure and its goals provided a context for socio-economic development intended as a guide to government to address strategic issues needed if the reforms were to be successful. \

[92] Murray (1998).

The objectives contained in the Paper are intended to address the following key challenges:

(a) increasing sector efficiency;
(b) increasing security of supply;
(c) improving electricity access in a substantial manner in rural areas;
(d) promoting and developing the sector as a key for investment growth;
(e) ensuring environmental and socio-economic sustainability; and
(f) developing an efficient and appropriate governance framework and structure.

These are not easy challenges to overcome. The Southern African Development through Electricity (SADELEC) consultancy report of March 1998 indicates that the Namibian ESI faces a number of problems which will necessitate a dramatic shift in the industry operations. These problems include:

(d) the fragmented nature of ESI, and its effects on the economies of scale;
(e) the proliferation of a large number of electricity tariffs, which result in customers being treated differently;
(f) insufficient customer focus among distributors, leading to sub-optimal quality of supplies and services; and
(g) lack of skilled staff in many places; this has negative implications for efficiency and delivery.

In an attempt to address some of the problems, various reform measures were tabled by the MME in May 1998 and were subsequently adopted in 2001. These are:

(a) Identifying and categorising existing participants;

(b) Specification of the ownership, structure and control of various entities with the aim of formulating legal, regulatory and governance mechanisms for the industry;

(c) Revision and analysis of existing pricing methodology, tariff structures and levels to various customer groups and harmonisation of the tariff regime; and
(d) Promotion of dialogue with investors and creation of skilled human resources.[93]

The White Paper on Energy Policy provides a clear focus on social upliftment and rural development through electrification, with special attention given to those demand sectors that have been neglected historically, namely poor urban and rural households. Renewable energy sources and technologies are regarded as an integral part of rural electrification strategy that aims to provide access to safe, reliable and affordable energy.

White Paper on Energy Policy requires Government to provide access to electricity for 25% of the country's rural population and 95% of the urban population by the year 2010.[94] It defines a rural electrification programme. It also recognises the shortage within Namibia of the technical, administrative and financial expertise required to operate and maintain electricity assets. The Energy Policy therefore promotes the participation of private investors and entrepreneurs.

The White Paper also emphasises the objectives of improving energy sector governance and achieving energy security through the diversity of supply. It is further stated that to ensure the successes of the ESI as a whole, government will have to consider various developments over time.

[93] MME (1998).
[94] With present levels estimated to be 12% (rural) and 75% (urban), this is an ambitious goal requiring substantial financial resources.

Such developments include giving customer the right to choose their electricity supplier; introducing competition into the industry, especially in the generation sector; permitting open, non-discriminatory access to the transmission system; and encouraging private sector participation in the industry.

> With regard to competition reference is made to IPP. In this regard the White Paper states: "*Government will investigate options for improvement of sector efficiency through electricity supply industry ... and the possibility for competition by encouraging independent Power Producers to enter the market ...*"[95]

Thus, the model of power sector reform laid out in the White Paper mirrors the standard or ideal model being followed internationally: vertical and horizontal unbundling to separate out the potentially competitive components of the industry (generation and retail supply) from the natural monopoly components (transmission and distribution wires); the introduction of competition through new private players; non-discriminatory, open access to transmission; and independent regulation. Since the publication of the Energy Policy White Paper, momentum has been building around defining in more detail how the industry will be restructured to provide competition.

6.3 The Electricity Act, 2000

It is generally accepted that a stable, predictable and transparent legal and regulatory framework is an essential requirement for attracting substantial long-term investment into the energy sector. To this end, the Namibian Government enacted the Electricity of 2000 and established a regulator for the industry. The

[95] GRN, White Paper on Energy Policy: MME (1998).

Act establishes the Electricity Control Board (ECB) as the industry Regulator, and defines a licensing regime.
It specifies the criteria for evaluating licence applications and the obligations of licencees. Licences are issued for provision of service within geographically defined areas.

The Act replaced the outdated 1967 Ordinance which governed some parts of the electricity sector. In addition it consolidated the there were legal rules pertaining to electricity that were scattered.[96]

The main features of the Electricity Act:

a) the establishment of the ECB and the description of its objectives, functions, powers, composition and conduct of meetings;
b) the to regulation the licencing of system;
c) particularly the aspects related to generation, transmission and distribution and supply; and
d) the creation of dispute resolution opportunities.

The Act is divided into five parts. Part I (sections 2 to 11) deals with the establishment of the Electricity Control Board, its composition, terms of office of Board members, conduct of meetings and the appointment of a Chief Executive Officer and other staff. The Electricity Control Board was established on 10th July 2000 as an (independent) body with the general aim of promoting an efficient, reliable and economic system of electricity within Namibia.

[96] Classic examples were the provisions of the Regional and Local Authorities Act governing these institutions.

Section 3 of the Act describes the objectives of the ECB to be to "... *exercise control over and regulate the provision, use and consumption of electricity in Namibia and oversee the efficient functioning and development of the electricity supply industry in accordance with prevailing Government policy.*"

The Electricity Act empowers the ECB to:

a) issue or revoke licences to generators, transmitters and distributors, and to determine whether licencees are competent to supply;
b) regulate tariff levels and structures;
c) regulate quality of supply and service standards;
d) collect information;
e) settle disputes between suppliers and between suppliers and customers;
f) approve or reject applications for expropriation of property for facilitation of electricity supply; and
g) advise the Minister on any policy matters.

Part II (sections 12 to 16) deals with ECB levies. Part III (sections 17 to 25) deals with the power of licencing for each activity and exemptions.[97]

Section 30 empowers the Board to cancel licences which should exceed 50 years. The Board is really more of an advisory body to the Minister, but section 30 fully empowers the Board where it does not need to consult or recommend to the Minister.

Section 39 empowers the Minister to issue regulations. Some of the regulations came into effect on 12th July 2000 technical and economic regulations.

[97] This is a challenge to the old belief that electricity is a single product a natural monopoly. This reinforces the notion that electricity is a set of products capable of being separated as discussed earlier in this paper, See section 17(2) of the Electricity Act.

The role of the ECB it can also potentially play a role in ensuring that the Government's social objectives are achieved in the industry.

The ECB could include and monitor electrification provisions in distribution and supply licences, while approved tariffs could include cross-subsidies for the poor.

Part IV (sections 26 and 27) deals with and defines the duties, rights and obligations of licencees. It provides the procedure to be followed in applying for and cancellation of some acquisition rights.

Part V (sections 32 to 43) defines the Board's power of expropriation, and offences. It also places the control of the electricity supply within the jurisdiction of a local authority directly under the control of a Council, except where or if there is a person who may have acquired the right of supply within that area, whether under a licence or by agreement with the local authority. The Act does not make provision for any appeal to the Minister by an aggrieved party.

6.4 Law and Policy Analysis: Gaps and Contradictions

6.4.1 Introduction

A crucial test of the ESI reforms and regulatory design is whether the policy and legislation ensure dynamic efficiency and support the implementation of the reform objectives, including that of private investment and electrification drive.[98]

[98] Berry (1998); Eberhard (2000).

Whether the Namibian Policy and Act conform to the abovementioned principles can be seen when both instruments are analysed in the next paragraphs by lifting out gaps, issues and contradictions.

While the White Paper on Energy Policy signifies the foundation for regulation, the Policy lacks a clear strategy for long-term objectives. The first relates to the uncertainty with respect to the desirable organisation for the overall ESI. At present, the Government's position is to introduce competition into the sector through a manageable process, into generation through an interim arrangement of a Single Buyer market model (this will be discussed elsewhere), ring-fence NamPower transmission, and introduce five Regional Electricity Distributors (REDs). Unlike its South African equivalent, neither the Policy nor the Act specifies what type of market model should be adopted. This lack of policy or legal directive has caused delays in the finalisation of and the adoption of a formal structure which will allow the realisation of the reform objectives.

The authors of the White Paper and Act did not foresee the establishment of the SB as a market structure for Namibia, hence the silence of both these legal instruments on the SB or its activities.

The second deals with development of relationship, the lack of establishing clarity about roles, accountabilities and process of regulations. When asked about problems or limitations in the Namibian ESI regarding policy and regulation, the key issues raised by stakeholders in interviews were:

a) confusion about roles of ESI entities and regulatory processes; and

b) significant skill shortages in the sector, particularly the ECB, MME and local authorities.

Overall, the key problem facing the further development of the Namibian ESI appears to be a lack of policy focus and clear regulatory framework. While the intentions behind the development of the Act and ECB are good, and they have set up the structural foundations for the industry, the policy to this point does not provide the necessary direction as to its implementation, or the regulatory 'philosophy' to be adopted.

Therefore, while the 1998 White Paper is a useful overarching statement of Government policy, and while the basic regulatory structure as outlined in the Paper has been enabled appropriately and is adequate to mitigate against most obvious structural problems, there is a whole level of detail missing about **who** does **what** and **when** and **how** it must be done. The implications of not having a clearly articulated regulatory framework are that:

(a) Investment in the ESI will not be maximised, as potential investors will lack confidence – they will see the Namibian ESI as possessing significant regulatory uncertainty, including sovereign risk. This will have the biggest impact on the generation sector.

(b) The problems with the distribution sector regarding uneconomic supply and electricity service delivery bundled with other services will be much harder to resolve without clarity about what is required from the industry and without a robust mechanism to enable change.

These negative effects will be further compounded if there is no increase in the level of expertise and in-depth knowledge of reform processes and issued possessed by key decision makers in policy and regulatory roles. Further, many of the current legislative and licence provisions are very broad and possibly open to interpretation and even abuse.[99]

There is thus no clear starting point of what is required of regulation, both in terms of the preferred means of regulation or the preferred outcomes. There are no tools to assess regulatory impact upon stakeholders and the industry as a whole, regulatory review is limited (if not non-existent), and hence the behaviour of industry participants are not monitored.

As pointed out earlier, the situation in the ESI is complicated by ambiguity over institutional roles, authority and jurisdiction for reasoning so far has ignored the stability of the institutional environment as an important determinant of efficiency of the various reform models. In an unstable institutional environment, transaction costs and thus efficiency, depends crucially upon the discretionary powers of the regulator. The wider the regulatory scope and the wider the degree of vertical integration of the electricity sector, the greater is the risk of regulatory opportunism. If an appropriate system of institutional checks and balances is missing, a policy limiting the regulatory scope is a measure of reducing the risks of regulatory opportunism. For example, the roles of the Competition Commission, Central Governing Agency and, to a large extent the courts and the Ministry of Mines and Energy, are unclear. Although the ECB's jurisdiction over municipal electricity distributors, and therefore future REDs, has been understood largely and accepted by the Ministry of Regional, Local Government and Housing and Rural Development, its

[99] Namibia ESI Summit Workshop Notes, February 2002.

authority over NamPower remains to be clearly defined and universally accepted. Sound governance will be critical to the successful development and operation of the ESI. .[100]

The ECB has yet to be fully acknowledged as **the** regulatory body for the electricity industry. Gaining acceptance is critical for the ECB and the successful, efficient functions of the ESI. Stable and accepted institutions are important for continuity and certainty of policy application. In the highly capital intensive electricity industry, stability and continuity are crucial for attracting needed investment at a reasonable cost.

Presently in Namibia, given its surplus capacity situation, new investment in generation is an immediate issue. Whether the regulatory regime and market structure remain publicly owned monopolies, or become more competitive with some mix of private/public ownership, the need for institutional stability and continuity remains, even if they might manifest differently in a more competitive environment.

Both the Act and Policy do not require complete organisational separation of the monopolistic and competitive sector, as in the case of international jurisdiction with larger markets. Such requirement for the Namibian market will not only be dramatic: a forced break-up of the incumbent (NamPower) will be politically unacceptable. Another consideration, perhaps, was the fact that although the industry was vertically integrated, the market and the utility was rather small from the outset, and break-up would be contrary to the desired development,

[100] Clearly establishing the roles of different stakeholders becomes essential. For example, section 34 of the Act enables the local authorities to control electricity supplies in their own jurisdiction. However, it is not clear which portion of the supply could be monitored under the Electricity Act of 2000, or whether it is totally exempted and, if so, who looks after the interests of the consumers in that area.

which is a long-term horizontal aggregation of companies into units which will have the competence and the strength to survive in a competitive environment. Separation of accounting activities, or "ring-fencing", was thus deemed sufficient.

There is uncertainty about Government policy on where future investment should come from, as generation capacity began to run out of both the country and region. While one of the goals of the White Paper on Energy Policy is to encourage private sector participation in the ESI, both the Act and Policy are silent on how and through what means this will be realised.[101] The situation creates a further dilemma for Government, that with the delay in the ESI reform process, the complete framework to facilitate investment by other players is not yet in place. A further question of appropriate revenue and pricing policy arises.[102]

On the governance and institutional arrangement: although the ECB's governance model has been reasonably successful in some instances it needs to be strengthened to deal with substantial challenges ahead. This includes strengthening the Board's capacity to deal with greater demands of ESI liberalisation and EDI reforms while retaining the principles of good corporate governance and resolving problems associated with the CEO's ministerial appointment.

[101] It is a known (though not written) principle that privatization is not a politically preferred option for most trade unions in Namibia, and being close to elections it is unlikely that politicians will ever discuss the subject, let alone propose it.

[102] A national tariff study was conducted in 2002. It was discovered that the current tariff structure did not cater for depreciation and other unforeseen costs resulting from the generation capacity of Namibia. Therefore, because of the need to venture into new generation projects, renewal of the contract between NamPower and Eskom at a higher tariff: and the depreciation replacement of infrastructure, the current tariff needed to be adjusted to be more cost reflective in order to be able to sustain the ESI in the long term [???, see p. 21 of written manuscript].

There are other pitfalls such as:

a) Both Ministerial appointed (and politicised) Board and Board structure where the predominance of part-time members with very light time commitments makes the performance of its functions unsatisfactory.
b) Regulatory independence: Although one would like to believe that a reasonable level of regulatory independence of the ECB exists and that it was not subject to direct political pressure with respect to its decision making, the present arrangement is that the ECB acts as an advisory body to the Minister of Mines and Energy.[103]
c) The issue of an arms-length relationship between the ECB and MME, which should clarify the role of Government as a policy maker and shareholder, has to be clarified from that of the ECB as a regulator, an aspect which is lacking both in the Policy, Act or regulations.

In the Namibian case, consistent approaches and timelines between the Government and the regulator are unclear and at times create conflict of interest, especially where a party is aggrieved by a decision/recommendation of the ECB. It is not clear in the Act or the Policy, neither is it specifically mentioned, whether the appeal is to the Minister (the same authority being advised by and deciding on the recommendation of the regulatory body) or to the courts, both on process and substance.[104]

The other *lacunae* in the Electricity Act and Policy is whether the Minister can overrule or ignore recommendations of the ECB on an

[103] This denotes that the ECB has little autonomy. Its Board is appointed and controlled by Government and its decisions must be referred to and approved by the Minister.
[104] South African arrangements are: on process to courts, and on substance to the Minister.

application, e.g. for a licence, bearing in mind that once granted it can only be withdrawn under conditions clearly spelt out in the Act.[105]

While the ECB is empowered to and one of its functions is to handle disputes between suppliers and customers and deal with customer complaints, neither the Act nor the Policy contains clear dispute handling and resolution mechanisms.

Then there is an issue about the decision-making process. Once a regulatory body is created, it should translate the legislation which established it into clearer operational policies to help guide it in its decision-making with regard to each industry participant. This will help it to reach decisions quickly and make it more difficult for its decisions to be challenged by politicians who may want to exploit weaknesses to justify their intervention.[106] Primary areas needing policy guidelines normally include control over the economic behaviour of industry participants and over technical performance.

Transparency is a key mechanism to reduce concerns over misuse of regulatory authority. This may include requirements for open public decision-making and the need to give detailed reasons for decisions.[107] In the ECB's case, one can state that the decision-making process is not transparent though there are public meetings. The formal role for stakeholder involvement, consultation and representation in issues under discussion affecting such stakeholder is notably absent. This is a significant gap in the regulatory framework. Further, internal structures

[105] However, an incident in 2002 where the Minister ignored the recommendations despite the conviction of the ECB (rightly or wrongly) that a bidding company had insufficient technical competence and financial status, awarded the licences for 25 years in preference to an operational competitor could confirm the belief that the Minister has that power. This may also confirm the belief that regulators can find themselves politically compromised and hence not in a position to exert authority. The company in question, NORED, has since proved the regulators' convictions wrong.

[106] Tenenbaum (1998).

[107] Transparency increases the likelihood of inappropriate behaviors being detected, and can also help to build public and investor confidence in the integrity of regulatory processes.

and process within the ECB are not apparent. For example, no provision for representation or intervention exists and seems to be allowed only on an *ad hoc* basis.

While the Act is meant to regulate the whole electricity supply industry, it is very clear that it was written mainly for grid electrification. From the definition in the Act, it is evident that the activities relate to generation, transmission and distribution at the time.
It failed to deal with off-grid electrification and its regulation. This makes the Act and the Policy inconsistent with each other.

The Act further fails to deal with the procurement or trading part, which is essentially the activity of the Single Buyer.

There is a concern by other stakeholders that both the Act and the Policy failed to clearly address the market dominance, especially that of NamPower.[108] This may not be an issue right now, but the role of the regulator could change if the ESI allows more competitors.

By enacting the Competition Act of 2003, the Government has established a broad competition (antitrust) policy and legislative framework. However, unlike its South African counterpart, no memorandum of understanding was concluded between the ECB and the Competition Commission. No clear demarcation of their respective jurisdiction and functions exist. Naturally, one would assume that the ECB will continue to regulate natural monopoly components of the industry, such as transmission and distribution wires. It is also likely to assume responsibility for market surveillance and work with the

[108] This issue, though covered by the Competition Act, appears not to be adequately addressed.

Competition Commission around any problems or challenges concerning market power and abuse.

On the EDI restructuring front, the rationalisation of the distribution sector has been placed in confusion because of a lack of policy or legislative directives. Thus, uncertainty has resulted in the formulation of principles of the REDs being different, both in terms of how they deal with the structure, the issue of revenue to local authorities, and representation in those REDs. The REDs establishment process has raised some issues regarding the principles of asset based REDs, particularly in connection with the transfer of distribution assets between entities.

Both the Electricity Act and the Policy have some shortcomings that are limiting regulation of the industry. The Act is being amended to bring on board technical and economic regulations to set standards and how the ESI players should conduct economic and technical matters in their business, to remove limitation within the current legislation for the participation of private investors in the generation of power and its distribution to consumers. The current legislation does not correspond with current sector issues to address the issues of what market freedom and choice an IPP should be given, what type of framework for IPP entry into the market in terms of transmission access, power purchase agreements and who administer them

However, this is not the point here. The question to be discussed here is the question of which regulatory model should be strived for in the medium or long term. This choice, of course, does have impacts on short-term decisions. New investors or contractors will take this choice

(and its credibility!) into account when making decisions. In addition, donors will be increasingly reluctant to provide funds for reconstruction if the targets are not clearly defined.
Hence, getting the institutions right will be of utmost importance. A credible framework has to be designed for the significant investments needed, particularly in transmission and distribution.

Generally, it appears that in many respects the Act does not reflect the total sentiments of Government's objectives and policy, and hence needed to be reviewed and realigned to reflect, amongst others, the following principles: transparency, information access to the public, forecast and analyse impact of decisions, public participation in decision-making (interventions), and ability to ask questions.

An amendment to the Electricity Act which is still under discussion was introduced in 2002. This amendment Bill, which seems to concentrate on the loopholes the ECB felt were not covered by the original legislation, is supposed to authorise the activities of the Single Buyer by introducing a trading licence category, give wider powers of recommendation (not autonomy) to the ECB, and introduce technical regulations.

One may therefore still argue that the establishment of the legal and regulatory framework so far achieved by the Namibian Government is not a sufficient condition for efficient and effective performance of the electricity sector. The Regulatory Board needs to become autonomous and independent from the arms of Government and political interest. This question, though discussed during the Swakopmund workshop, has so far not been dealt with. The amendment Bill has not dealt with the issues discussed earlier. It also becomes very clear that the White Paper

on Energy Policy will have to be revised, not only to deal with the issues discussed, but to bring it in line with the current environment and with other legislation which have an impact on the ESI, such as the Competition Act.

6.4.2 Brief Overview of the Competition Act of 2003

Introducing competition is not just a matter of removing legal barriers to entry. It is usually also necessary to introduce new regulatory instruments to ensure that not only do new firms have access to any key inputs, but that regulators also control any behaviour which may lead to unfair practices. This came from the realisation that industries, including electricity, are not monolithic but are made up of many separate parts which can sustain competition.[109]

A credible competition policy is crucial to the proper functioning of the economy. Objectives of this policy are to remove or reduce the distorting effects of excessive economic concentration and corporate conglomeration, collusive practices, and the abuse of economic power by firms in a dominant position. In addition, the policy will ensure that participation of efficient small- and medium-sized enterprises in the economy is not jeopardised by anti-competitive structures and conduct.

The introduction of competition has transformed the way that the infrastructure industry is regulated. In Namibia, the enactment of the Competition Act, No. 2 of 2003, was then an important milestone to complement the Government's commitment and to act as a tool of enhancing competition.

[109] Joskow (2001).

a) The purpose of the Competition Act is defined in section 2 as promoting efficiency and adaptability, providing consumers with competitive prices as well as product choices, promoting and advancing social and economic welfare and promotion of a greater spread of ownership.[110] One can interpret this to mean that:

b) the competition policy proposed here accepts the logic of free and active competition in markets, the importance of property rights, the need for greater economic efficiency, the objective of ensuring optimal allocation of resources, the principle of transparency, the need for greater international competitiveness, and the facilitation of entry into markets all within a developmental context that consciously attempts to correct structural imbalances and past economic injustices;

c) competition policy seeks to incorporate the interests of consumers, workers, emerging entrepreneurs, and other corporate competitors, and to protect the ability of our large corporations to penetrate international markets, just as we must allow foreign investors to do business in Namibia in the interests of enhancing overall efficiency and growth;

d) competition policy has to assume that the resolution of competition law cases be conducted in a procedurally fair, coherent, expeditious and decisive manner, and that new institutional arrangements for pursing the policy will entail an appropriate division of labour within the relevant agency and independence;

e) finally, competition policy seeks to be sufficiently flexible to incorporate existing policies and future modes of market regulation that extent in a coherent manner across the full spectrum of industrial and trade policy, foreign exchange policy, the attraction of foreign direct investment, the restructuring of state assets, tax reform, labour market policy, financial market regulation, consumer protection,

[110] This is probably one of the few anti-trust legislation containing an affirmative action and black economic empowerment provision.

research and development incentives, small business and affirmative action programmes, corporate governance instruments and revised company law.

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The application is to all economic activities within Namibia or those having effect in Namibia.[111] It excludes collective bargaining activities having non-commercial socio-economic activities, and those exempted by notice of Gazette by the Minister of Trade and Industry in consultation with the Commission.

Sections 4, 5 and 6 deal with the establishment of the Competition Commission, with jurisdiction throughout Namibia. Unlike its regulatory counterparts in the country, one sees a true independence and autonomy of the Commission, subject only to the Constitution and the Law. Therefore, members are expected to perform their functions without fear, favour or prejudice and without their decisions overruled by Ministerial discretion.

Among the important functions of the Commission is the implementation of measures to increase market transparency. Chapter 3, Part I, deals with restrictive practices, abuse of dominant positions, and criteria to determine dominant positions and the exception thereof (sections 23, 24, 25 and 27).

Investigative powers are broad, but they are subject to judicial oversight in sensitive areas. Any premises may be entered and searched if there are reasonable grounds to believe that a prohibited practice is taking place there (or has taken place, or is likely to), or that there is anything connected with an investigation under the Competition Act in the

[111] Note the overlap of jurisdiction between this provision and section 1 and 3 of the Electricity Act.

possession or control of someone on the premises. Such a search requires a warrant, issued by a High Court judge or magistrate.

A warrant may not be needed to enter and search business premises, though, if the owner or person in control consents to the entry, or if the official reasonably believes that a warrant would be issued but that delay to obtain one would defeat the object of the search. That is, the statute permits an *ex parte* search of business premises. The investigators may examine documents, ask for information about them, take notes and make copies, use computer systems to search and reproduce electronically stored information, and attach and remove evidence.

From the above relevant provisions, it is clear that the reasons of any competition policy is intervention and initiative to make markets work better, while the Competition Act serves as enforceable rules by which market participants must abide. This means that the focus of this Act is not only market (market structure, seller concentration, entry conditions, barriers to entry, buyer concentration, market definition which includes product and geographic) but the focus is also firm, which means firm behaviour and strategy dealing with price and non-price competition.

In the previous analysis, the discussion on arranging competition and regulatory oversight clearly indicates that there are some parts of the electricity business which are not easily placed within a competitive environment: *viz* the transmission and distribution wires tend to remain natural monopolies and therefore need to be regulated in order to protect consumers against potential monopolistic abuse.[112]

[112] Eberhard (2000).

The generation and retail sector, as well as certain aspects of market and system operations, are potentially competitive and naturally should be subject to the competition policy, legislation and oversight.
This essentially can be interpreted to mean that ideally the ESI regulator – the ECB – should oversee transmission and the distribution segment of industry, whilst the Competition Commission should oversee the generation and retail aspects of the industry.

Looking at the respective functions and roles of the respective authorities as provided for in section 16 of the Competition Act and section 3 of the Electricity Act, it is clear that there will in practice be overlapping responsibilities. For example, if generation becomes competitive and retail competition is introduced, the Competition Commission would have a responsibility to ensure that a competitive electricity market is maintained and that any instances of market power abuse or proposed mergers which undermine competition is dealt with.

The Electricity Act gives the ECB statutory responsibility to regulate and control the activities of the ESI, which includes market access (through the licensing process), and to approve electricity prices. Unlike its South African counterparts, where the legislation make provision for a formal agreement, negotiation with other regulators, as well as participation of the Competition Commission in the proceedings of any Regulatory Authority, the Namibian legislation (both for Competition and Electricity) have no provision for a cooperation agreement.

Both legislations do not clearly distinguish which aspects of the industry need to be brought under the competition policy and legislation, or how cooperation with other regulatory authorities are to be achieved. A

common understanding will need to be developed between the regulatory bodies and Government on the scope of the reforms and the respective roles in overseeing competition, more specifically if the envisaged State-owned Enterprise Bill and Agency becomes a reality.
There are profound implications, both in the technical and economic regulation and the respective roles of the existing and envisaged agencies.

Despite the good intentions of both the legal and regulatory framework, the Namibian Law Makers have not taken into consideration the fact that the industry, not being monolithic, the roles and authorities of the respective regulatory agencies have to be clearly spelled out and a framework of cooperation has to be worked out if competition and regulations are to be implemented successfully.

The Competition Commission is still new and its efficiency and impact is yet to be experienced. It is not clear from the Act what relief, if any, would be applied. The law remedies and sanctions are prospective only, such as orders to withdraw from restrictive agreements and to correct their consequences. A violation of such an order might be subject to criminal prosecution. The application of this law combines only administrative approaches, unlike its South African counterpart which combines both administrative and quasi-judicial approaches.[113] Actual experience with the enforcement process is limited, except for mergers. Most non-merger matters have been resolved by consent agreements or delayed by applications for interlocutory relief.[114]

[113] The South African Commission has the first responsibility with respect to every matter arising under the Competition Act. Decisions in contested matters are made by the Tribunal, on the record and after an open hearing of the views of the Commission and the parties. The Tribunal also has the power to impose sanctions. And parties may appeal any final Tribunal decision (and some other ones as well) to the CAC.
[114] South African Competition Tribunal (2002).

The Commissioner has the power to initiate a complaint against a prohibited practice. On receiving a complaint or information from a third party about a prohibited practice, the Commission must initiate an investigation.

Meeting competition is subject to a showing of good faith. Differential treatment can be a justified response to market conditions, such as imminent deterioration of perishable goods, obsolescence, liquidation, or going out of business. Providing an explicit rule about price discrimination may demonstrate to small businesses that the competition law is looking out for their interests.

The Competition Act does not contain a rule for determining what to do if another law or regulation permits or requires actions that might be considered anti-competitive. Most likely, if a case of conflict arose, the courts would apply the general rule of construction that general laws do not override specific ones (even special ones that had been enacted previously) unless the intention to do so is explicit.

6.4.3 Other Legislation

As indicated elsewhere, there is a proliferation of other legislation and regulation which are applicable to the ESI, which are administered by other Ministries and some of whom may not necessarily be in sync with both the Policy and the Act.

6.4.3.1 Legal Foundation

Four laws establish the legal foundation for the provision of electricity services in the rural areas of Namibia.

(a) **The Local Authorities Act**

The Local Authorities Act (Act No. 23 of 1992, amended 2001) provides for the establishment and structuring of local governments, and defines the powers, duties and functions of Local Authority Councils. Local Authority Councils exist on three levels: municipalities, towns and villages. Each type of Council is authorised by the Act to distribute and supply electricity within its jurisdictional area.

Settlement areas – where communities have begun to develop, but no formal administrative authority has been established – are not covered by the Local Authorities Act.

(b) **The Regional Councils Act**

The Regional Councils Act (Act No. 22 of 1992, amended 2000) provides for the establishment of regional governments and defines the powers, duties and functions of Regional Councils. The Act authorises these Councils to conduct planning for the development of an electricity system (including investment in infrastructure) and to

enter into joint business ventures for service provision. Settlement areas are covered by this Act.

(c) **The Decentralisation Enabling Act**

The Decentralisation Enabling Act of 2000 formalises a commitment by the national Government to enhance the authority of municipalities and local and regional councils with respect to electricity distribution and supply. The Act confers full responsibility and accountability for electricity distribution to municipalities and empowers towns to take on increasing responsibility in this area. The Act also establishes the basis for devolving rural electrification responsibilities to Regional Councils.

(d) The Regulations Pertaining to Health and Safety, which fall under the Labour Act of 2000, as amended, and which are administered by the Ministry of Labour

There are currently attempts to bring the Health and Safety Regulations in line with the Act, more specifically with the Electricity Amendment Bill. The biggest concern is, however, the lack of an environmental legislation and policy within the country, especially if one considers the huge impact electricity activities can have on the environment. Although there are some provision and requirements contained in the Electricity Act of 2000 and the regulations, there is a need for a comprehensive policy and legislation in this regard.

The ECB has currently no direct jurisdiction over environment or health and safety issues, despite the fact that Environmental Impact Assessment (EIA) reports need to be submitted to it. The overall responsibility for these issues is divided between the Ministry of Environment and the Ministry of Labour. Their role in respect of regulatory aspects of electricity has never been defined clearly.

The prerequisite for a carefully designed legal and regulatory framework that is sensitive to specific characteristics of individual power sectors and country specific economic conditions. If it is done well, these potential benefits are enormous. The focus of recent regulatory reforms has been the introduction of competition into the generation and (later) supply sub-sectors of the electricity sector through market liberalisation. The truth is that market liberalisation critically shifts decision-making from the State (or State-influenced entities) to the market and, often for the first time, gives consumers a choice, as will be seen when we discuss the chosen market models for EDI and ESI in the next chapter.

In summary, one can sum up the legal and regulatory reforms in Namibia as follows:

- The results of the reform process were embodied in the Electricity Act and the White Paper on Energy Policy, but the exposure of the electricity industry

to market competition has also subsumed it to competition law. The Electricity Act governs matters specifically related to the ESI, whereas the competition legislation provides the legislative framework for the sector of the electricity market exposed to competition and applies, in addition, to the Electricity Act.

- The Electricity Act and the White Paper were only a starting point for the larger reform process. It indicated the direction: more detailed regulations, regulatory institutions and industry structures are still under development. Utilities were forced to de-bundle or ring-fence network activities from production and sale through separate division with separate account.

6.5 THE EDI AND ESI MODELS

6.5.1 Introduction

There are six important reform objectives, namely; introduction of competition in generation; introduction of customer service; recovering of standard cost; attraction of private investment; entrenchment of universal service and promotion of integration of the grid. It is not, however, desirable to elaborate on these objectives. What remains to be address are the ESI and EDI models in Namibia.

6.5.2 The EDI Reforms: The Regional Electricity Distributors (REDs)

In the absence of reforms most electrical systems suffer from unbalanced tariffs, inadequate revenues (often associated with failure to collect bills and reduce theft), excessive cost and inefficient or insufficient investment. Normally, the logical place to address revenue shortfalls is at the distribution and supply end (usually combined), which collect revenue from customers. The best way to start and sustain pricing and related reform is to separate the distribution monopoly from the rest of the industry.

The EDI was in need of reform, due to the several problems.[115] A key issue is the lack of financial viability, with many municipalities close to bankruptcy and not paying NamPower for bulk supplies.[116] Another problem is inequitable treatment of customers, with different tariff levels, quality of service and reliability.

The key steps in EDI restructuring were thus to combine NamPower distribution and local authorities and to form regional electricity distributors (REDs).

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[115] Clark (2001 : 127 – 8).
[116] NER (2001).

A study commissioned under the auspices of the Ministry of Mines and Energy recommended that Namibia be divided into five electricity distribution regions, and that regional electricity distributors (REDs) be established to distribute and supply electricity within these regions (including all urban and rural areas). This recommendation was approve by Cabinet in November 2000 and is now being implemented.

Unlike in South Africa, where the principles of RED formation were contained in the Electricity Distribution Restructuring Bill, where the details of and the guidelines for reform are provided for, neither the Act nor the White Paper on Energy detailed how the rationalisation would be achieved. The main thrust around EDI reform revolved thus under financial and structural issues.

The key objectives for EDI reform could be summed up as aiming towards: Consideration of resources to achieve economy of scale; creating self sufficient in distribution; demanding of politics and commercial business; and ensuring that constitution is logical and simple.

Government decided that shareholding in the REDs shall be asset based, that is, limited to the assets owners of distribution assets entity.[117] On governance and legal status, it is recommended that each RED be controlled by its own professional Board of Directors, elected by its shareholders. Furthermore, the REDs should be established as companies incorporated in terms of the Companies Act. Government (through the ECB) will be responsible for setting and monitoring implementation of policy for the electricity sector as well as ensuring, through regulation, that REDs perform their functions effectively.

[117] There is no mention of, or legislative authority, for the Minister to intervene if municipalities did not volunteer. One would assume that the only logical recourse would be to refuse to grant or extend this etity a distribution licence, thereby making it hard for the entity to operate.

On regulatory arrangements, it was decided and agreed upon that the ECB would be concerned with macro regulation of the whole EDI with a view to meeting national objectives for the industry. The "end-state" regulatory regime for REDs would include: (i) separate regulation of (and licences for) distribution activities, captive market retail activities and contestable market retail activities; (ii) efficiency incentives for the distribution business and the captive market retail business of REDs through regulation of the allowed revenue for each RED; (iii) tight monitoring and performance against quality of supply and quality of service standards.

Without substantial increases in tariffs, major reductions in distribution costs, or the curtailing of the electrification programme, it is furthermore recognised that this rationalisation and restructuring process alone will have limited impact on improving the overall financial health of the industry. It is for this reason that the Tariff Study states that "*the entire industry (generation, transmission and distribution) must move to* ***cost-reflective*** *tariffs with separate, transparent funding for electrification and other municipal services*."[118]

Of the five REDs[119], NORED was successfully been created in 2003, while CENORD and Erongo RED are both at the advanced phases of formation. A lot of work still needs to be done to get these REDs operational. Central RED and Southern RED are at initial phases.

Some customers (contestable customers) would be eligible to choose the company from which they purchase electricity. These customers are defined as those using more than 100 GWh per year.

[118] MME Tariff Study (2002).
[119] The initial proposal was four; the fifth one started as an operator.

These customers could be supplied by any distributor. Smaller customers are captive to the distributor into whose area they fall and are known as captive customers. They are unlikely to benefit from competitive supply and hence require regulatory protection through control over tariffs.

However, there are also significant risks and costs involved in the move to regional distribution. Perhaps the largest is the risk that these do not become effective and financially sustainable operations. If the regional distributors do not function properly, the quality of service delivery will fall and they will be financially unsustainable. Regional distributors will also need to have comprehensive and coherent tariff structures, as this will help both to maintain financial sustainability and realise some of the potential gains from moving to regional operations. Finally, the costs of creating the regional distributors will need to be minimised. Much of this is related to the costs of transferring assets.

One of the biggest challenges facing the creation of REDs is the effect on the finances of municipalities. Municipalities currently earn significant amounts of surplus income from their electricity sales, which they use to fund other activities. In effect this surplus is a local levy on electricity, but one that is not consistently applied across municipalities, NamPower does not qualify to change a levy. Imposing this levy (surcharge) would not necessarily be harmful to the sector or economy, especially if it is regulated by the ECB.

The argument about the loss of income from electricity sales by municipalities and the important roles that this income plays in the cross-subsidisation of a wide variety of services is address in the Bill. It provides, in this regard, for the stipulation in the transfer scheme by the relevant municipalities for the payment of an amount to the municipality that it would have been entitled to as part of the electricity charges payable to it that would now be payable to the REDs.

The proposed EDI reforms to the electricity function will have a negative effect on this income stream for municipalities, unless this is made good through another mechanism. Government recognises the importance of this and has stated that lost income will be replaced. There is one main option for an alternative: a local government levy on electricity sales within its jurisdiction.

The further challenge is lack of properly maintained and compiled asset registers. Distribution asset owners are not exposed to receive market value for the assets transferred to the REDs. The obligation of REDs to extend electricity to the rural unserviced areas may in any event mean that there will be very little profit available for dividends to shareholders.

However, the REDs face the further challenge of ensuring effective governance, as they will be co-owned by many entities whose objectives may not necessarily be identical, and who will obviously be governed by different legislation.[120]

There is an unclear issue regarding the transfer of employees. Some local authorities understand it to mean that the electricity distribution businesses of municipalities will be transferred to the REDs as a going concern and the affected employees will have no choice in the matter. Conditions of service shall be no less favourable than before such transfer. This is a standard clause in legislation of this nature and one that is required through the operation of the law, but its implementation can prove to be quite costly to the new employer. Conditions of service and service benefits between different municipalities vary in the extreme and the question that arises is how you consolidate these benefits into a single set of benefits. The answer would probably be in retaining benefits as personal to transferred employees and the establishment of a new norm by the

[120] For example, the three legislations governing electricity in the rural areas discussed earlier, and legal limitation in terms of legislation such as the Regional Council in terms of ability to form joint ventures, or the fact that some of the shareholders may be tax exempted and others not.

RED as the employer of all new employees. Given the many local authorities involved in the creation of each of the REDs, this will be an administrative nightmare.

However, in the absence of legislation or clear uniform guidelines, the transfer of staff will be a major challenge for restructuring, as conditions of service need to be harmonised. It is critical that all support staff are also transferred to the new institution if municipalities are not to be left with surplus staff after the restructuring. In addition, apart from asset transfers, an even more difficult challenge is to identify what liabilities incurred for electricity in the past will be transferred, including loans, and medical and pension liabilities.

In addition, the geographic area of some REDs comprises a mix of areas with high and low concentrations of electricity consumption in order to provide a sound base. The challenge facing such regional distributors is that the local level of cross-subsidies should be made sustainable and reflect little variance in user tariffs. A further potential financial impact on municipalities is the weakening of their balance sheets and the consequent implications for credit ratings. If municipalities are perceived to be in a weaker financial position, this will lower their credit rating, thus increasing their costs of borrowing for other capital investments and reducing their access to private sector financing. This, in turn, would place a heavier reliance on national grants to fund infrastructure backlogs. The overall impact of EDI reform is therefore still unclear, as it can be a source of potential liabilities, particularly in relation to future investment and unpaid consumer bills. This is because of the potentially negative impact on municipal credit ratings and the removal of electricity as a credit control mechanism.

The reformed distribution industry does not bring in real competition and customers' choice. Since the REDs only have jurisdiction in their area where they are licenced to supply. Hunt states that for competition *in the market* to work, consumers have to *shop* around frequently for best buys, depending on price differentials offered by competing suppliers. Consumers in the REDs will still have no choice of supply. The financial viability of the industry can only be measured once tariff rebalancing has occurred and tariffs are brought to a cost-reflective position. The reality is that some REDs will always do better than others. Whether five REDs are the optimum number for the country moving from about 50 distributors, as opposed to the same number envisaged for South Africa where there is approximately 400 distributor's remains debatable. There is one school of thought who believes that in view of small population in Namibia three or four REDs would have sufficed, while others will argue that the size of the country and the sparse distribution of customers warrant five REDs.

6.6 The ESI Reform: The Single-Buyer (SB) Market Model

Electricity sector restructuring studies, debates and policy decisions, over the past five years in Namibia, have mostly advocated the adoption of the Single Buyer (SB) model. The SB is planned as a ring-fenced unit in NamPower and would be responsible for all purchases of electricity from generators and from imports from other countries. Distributors and eligible large users would have to purchase from the SB; whereas all other users would continue to buy from distributors.

Debate over the years has generally avoided questioning the original choice of the SB model and discussions, instead, have focused on possible governance models for the SB and possible exceptions that would allow Independent Power

Producers (IPPs) also to export, or eligible large users to perhaps also purchase directly from IPPs or to import.[121]

Given the policy direction and momentum of the past five years, it is clearly difficult to once again raise fundamental questions on market choice. As stated earlier, neither the 1998 White Paper on Energy Policy, nor the Electricity At of 2000, makes mention of the Single Buyer Model. Indeed, the White Paper on Energy Policy states that "*major electricity users* [will] *have the right to choose the most appropriate and economic source of electricity*". The proposed SB market structure emerged from ESI restructuring studies. Admittedly, these have received initial Cabinet endorsement. Cabinet decisions can be reconsidered, although not easily.

The SB model was motivated primarily by the desire to expand indigenous power generation capacity in Namibia and to facilitate the entry of private producers. It was seen as a sensible mechanism for creating a "level playing field" for new generation investments, a means for achieving market competition *for* or *to* the market and a way of achieving increased investment efficiencies and thus hopefully lower costs. The SB was seen as a first step in ESI reform and market liberalisation, appropriate for the small Namibian market.

It is entirely appropriate to re-examine the original rationale and motivations for establishing the SB and to assess whether the conditions have materialised, or are likely to materialise, that would justify the creation of an SB.

The first observation is that there have been no new investments in large generation plants for many years; consequently growing electricity demand is increasingly met from imports.

[121] Eberhard (2003).

Planned new investments have been postponed and even cancelled. The Shell/NamPower CCGT, which would have used Kudu gas, planned originally for commissioning in 2005, has been shelved. Environmental, economic and financing concerns continue to stall possible large-scale hydroelectric developments on the Kunene. NamPower has been considering a hydro installation at Divundu to supply the Kavango and Caprivi regions, but this will be a small arrangement in the range of 20 to 30 MW. The proposed wind farm at Lüderitz is still only a proposal, and it became a reality would make only a small contribution. There are few other immediate large power generation possibilities in Namibia. The coal-fired Van Eck power station is uneconomic to run and back-up diesel plants are expensive.

If a SB market was established now, would it have any real function in the next few years in terms of purchases of electricity from IPPs? Further, if a large gas-fired IPP investment did materialise, would it be dependent on a SB market structure?

One of the key characteristics, as identified by the Energy Planning Committee (the EPC)[122], was its high dependency on imports, especially from a single source – Eskom, the South African utility. The electricity sector faced considerable financing needs related to system expansion, upgrading and development of Namibian resources.

It was therefore the EPC's conclusion that:

a) the country needed a coordinated approach with regard to planning of future development of generating resources;

[122] The first Committee tasked by Government to look at the ESI reform in the country in 1998.

b) management of security of supply and developing an optimal mix of local electricity resources and imports;
c) identification of private sector participation in developing new generation resources; and
d) facilitation of competition in generation in order to diversify and broaden energy generation in Namibia.

The Single Buyer (SB) Market Model was seen as the ideal transitional measure towards a more competitive wholesale and retail market. As discussed earlier the Single Buyer model is based on the principle of generators competing to sell their products to a single entity. The model is at times viewed as a form of ***competition to the market*** as opposed to ***competition in the market***. It is considered to be 'toe in the water' approach to introduction. Some critics, such as Lovei[123], consider the SB to be the most limited form of competition.

6.6.1 Conditions Precedent for the SB

A progressive introduction of the SB model is possible with a mixture of State and independent generation in varying proportions. The buyer should not own generation to avoid conflict of interests and to maintain impartiality[124]. However, for the SB market or even any market to be possible the following must be present;

a) The available supply must exceed the demands; otherwise there cannot be any competition.

b) The stability of the institutional framework (reliable and stable political climate, independent judiciary, economic growth) is a prerequisite.

[123] World Bank (2000).
[124] Murray (1998).

c) The distributors must demonstrate sufficient cash revenues to cover their costs.
d) The transition system should be relatively free of bottlenecks.
e) The market and system operators should be independent of the market participants or any other forms of influence.
f) There must be incentives to attract investors to construct new generation and transmission capacity expeditiously.
g) Major consumers should be able to adjust their usage under real time costs.
h) Buyers and sellers should honour their physical and financial commitments.

The Government's policy decisions are based on the premise that Namibia's adoption of the SB model is a transitional measure towards a more competitive wholesale and retail market. Such development is consistent with the future development of a fully-structured electricity market. Thus, when trading has grown, the Single Buyer market is intended to be replaced by a Multi-Buyer-Multi-Seller (MBMS) market that would exist either within Namibia or across a number of countries.

6.6.2 Salient Features of the Namibian SB

Transitional nature of the Single Buyer: While this is usually the case elsewhere, the Single Buyer is viewed as an interim measure evolving into a Multi-Seller-Multi-Buyer (MSMB) market.

The Single Buyer will not be a legal entity, but a business limit within NamPower.

This is a practical and a sensible decision, given the small size of the Namibian market as well as the fact that NamPower has current capacity in managing generation and energy trading. This also means that the strong balance sheet of

NamPower, other than Government guarantees, will underwrite the operations of the SB.

However, there were concerns raised by other market participants that NamPower will consolidate its market power and monopoly status, especially since the SB will be primarily accountable to the NamPower Board. The counter-argument of NamPower and its consultants (SAHA International) to this was that the market rules and the licencing provisions would ensure that all operations are transparent. A clear governance structure must thus be worked out.

Generation and wholesale supply must be treated as competitive activity (open for competition). The key function of the Single Buyer will be to facilitate competition in generation initially and eventually in wholesale supply, which should not happen simultaneously but in a way that leads to a greater economic efficiency.

The Single Buyer should be treated as a monopoly activity. Arguably, one may say that the administration function of the Single Buyer and its nature requires it to be a monopoly in the same way as any independent market operator in a single market. Since these issues have not been dealt with by the White Paper on Energy Policy or the Electricity Act, the Amendment Bill dealt with the provision of granting a single trading licence to the SB

Salient features of the proposed market mean that:

a) NamPower will lose its monopoly over the country's power industry;
b) The private sector will be allowed to do business in generation;

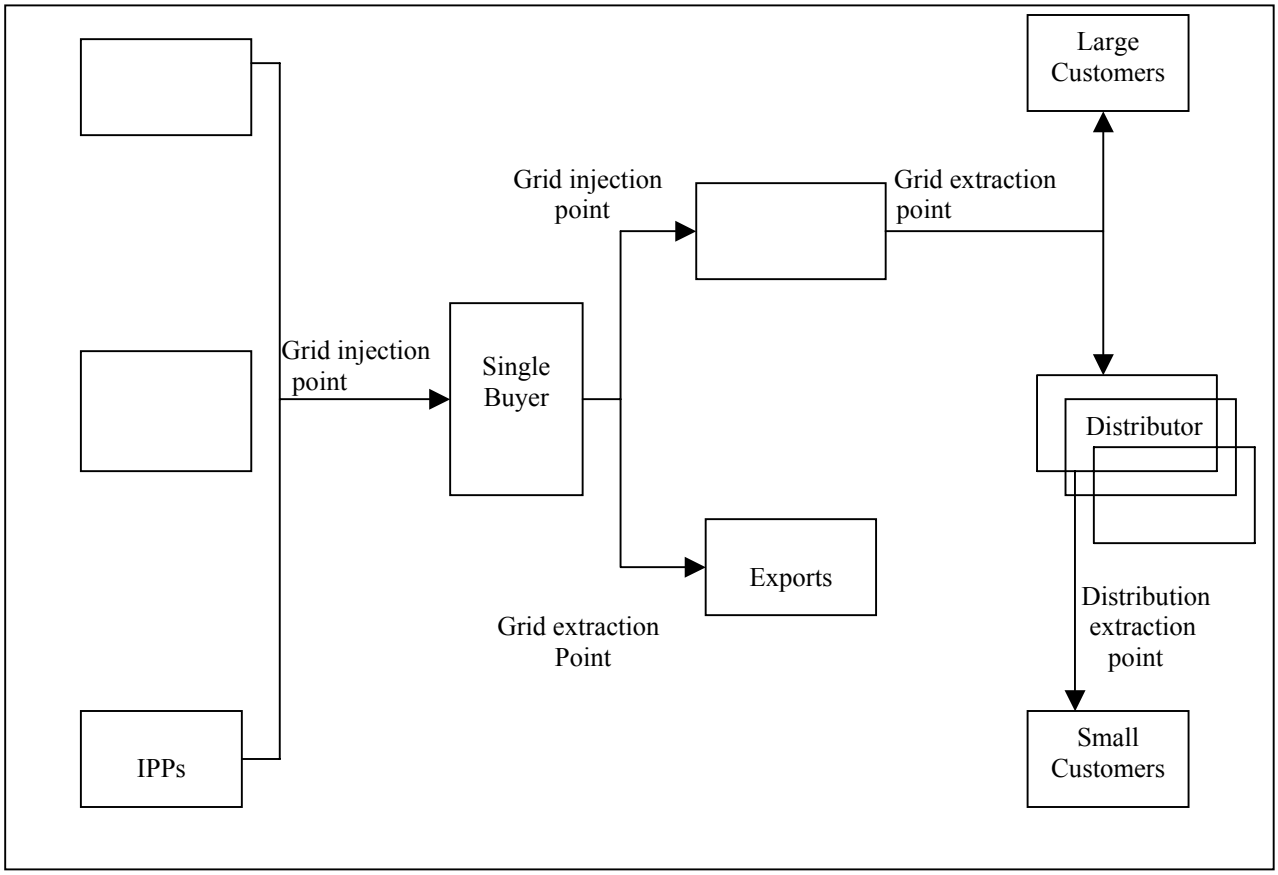
c) Government will regulate distribution and transmission networks and (hopefully) allow owners to charge producers a (reasonable) fee for using them; and
d) All power producers (internal or external) will sell their power to the SB, through bilateral and competitive bidding

6.6.3 Structure

In the Single Buyer model generator and producers of ancillary services sell to the single entity, an SB, which has the sole rights for the import and export of electricity. It also has a further range of objectives including the procurement of low cost and reliable electricity supply for Namibia. The model further requires that in the long, medium and short term all generation will need to compete to sell to the SB over different time horizons. The model further allows for the Single Buyer to export Namibian generation and arrange to wheel electricity through Namibia from one country to another. This allows the opening up of the transmission network which is considered a natural monopoly. The cross-border wheeling will be allowed consistent with the SAPP rules and guidelines. Within the country the SB may only sells to NamPower transmission supply, which in turn sell to few large customers and distributors.

The final structure is depicted in figure 9 below.

Figure 9 Namibian Single Buyer Electricity Market Model



6.6.4 Design and Implementation Problems

The proponents of competition may argue that the SB does not create competition within the Namibian ESI since it has the monopoly of procurement and that NamPower retains its monopoly over large customers through transmission supply. However, there were several rationales of keeping the structure as shown. Electricity markets typically must meet several objectives, which at times are conflicting (e.g. simplicity versus certainty of investment), and the final design of a market must balance the relative importance of each objective.

It is this consideration that underpins the design of the SB market as a chosen model, on whether the Namibian market is big enough to sustain a fully liberalised market and whether it will ever move beyond the SB market structure is arguable, especially taking into consideration the generation capacity and ownership.

The next phase of the electricity market reform in Namibia was planned to be the implementation of the concepts and proposals. The implementation phase was to include the formalisation of the Single Buyer role and the preparation of various documents including the detailed market rules and the transmission connection code.

The ECB and MME appointed consultants SAD-ELEC, and NamPower and its consultants SAHA International were tasked to develop the model and ensure its implementation. A designed model was proposed by SAD-ELEC. Internal discussions with NamPower resulted in some questioning of the proposed design.

Briefly, these concerns go to the very heart of the proposed Single Buyer model and NamPower's role in that model. The main concerns within NamPower can be summarised as follows:

a) Despite the design being simpler than the previous SAD-ELEC design, it remains complex given the size of the electricity market in Namibia;
b) Given the many roles NamPower has to perform, it was uncertain if NamPower has the capacity to implement this design;
c) The costs to NamPower of hosting the Single Buyer function may outweigh the benefits.
d) NamPower may lose control of the generation/energy trading process. A major strategic imperative of NamPower's is to be a driving force in the Southern African electricity market;
e) The Single Buyer will be focused on administration and/or may be captured by the ECB and may be less interested in maximising the trading opportunities available to NamPower in the Southern African electricity market;
f) The ECB may attempt to direct the Single Buyer to marginalize NamPower's new generation investment;
g) ECB could amend the rules arbitrarily it is able to do this in the amendments proposed in the Electricity Amendment Bill);
h) Actions by the Single Buyer could be controversial. There will be occasions where purchasing decisions by the Single Buyer may, in hindsight, turn out to be wrong.
i) The Single Buyer function has a large regulatory/administrative component requiring a different culture than NamPower's commercial culture which may result in diminution of the commercial focus of NamPower.
j) The ECB and ESI may accuse NamPower of using the Single Buyer to its own commercial advantage.

k) A Single Buyer within NamPower provides an easier rationale for the ECB to interfere in the market that a stand-alone independent entity outside of NamPower would not provide

NamPower was also keen to ensure that discussion about the model does not interfere with the attainment of what the Minister of Mines and Energy wants. This objectives of MME for the electricity market reform were articulated at the strategic conference in Swakopmund 1N 2004. They were:

a. The distribution sector has to be commercially viable, albeit funded from the rest of the electricity sector (4 to 5 REDs);
b. To ensure that there are enough new generation projects to cover the Southern African electricity shortage expected to occur beyond 2009;
c. NamPower to play a major role in the following projects:
   (i) the less expensive hydro plant on the Orange River (40 to 100 MW) develop now; and
   (ii) the Epupa/Baynes hydro (300MW) develop as soon as possible;
   (iii) Kudu generation to be pursued if the gas price is acceptable (800 to 1600 MW) and the surplus power can be sold.

These were just some o the implementation problems listed. The challenge was to find a balance between the introduction of competition and regulation, which was not a trivial task especially if one takes into consideration the lesson learned from the California energy crisis of 2000 and 2001, which makes a lot of countries decide to tilt moves towards command and control.[125]

[125] Recent trends in restructuring within the developing countries reflect that Government control and monopoly is being maintained in some form even after unbundling. Even after unbundling the traditional function of generation, transmission and distribution, the command and control retention is being justified as a measure to prevent runaway costs.

The principal consideration for structure and design of the market is that it must be consistent with other regional markets to promote cross-border trading, especially if the country is not self-sufficient. Namibia was the only country at the stage considering an SB model..[126]

It is clear that parties to the reforms, and more especially NamPower and the ECB, had different outlooks on achieving what they all interpreted as reform objectives. NamPower's viewpoint was to first correct generation and capacity in the country and thereafter to thin market models, because the size of the market and the generation situation in the country is such that it cannot sustain a stand-alone SB, let alone the envisaged Multi Seller Multi Buyer (MSMB) model. The ECB's viewpoint was to start the competition and make it possible for investors, such as IPPs.

It is evidence that Namibia, at this stage, is too small to sustain the envisaged stand-alone MSMB model, however, whether IPPs would prefer to contract with an entity such as the SB or directly with the customer is arguable. These differences and the complexity of the first designed SB market rules have resulted in the discussions and negotiations on the SB almost stalling since 2002. While there is a benefit in reform, there are certainly challenges and impacts which will need to be weighed.

[126] Power Applications and Research Systems Inc. [Online]

CHAPTER 7
CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Electricity reforms mean different things to different states, and irrespective of what model chosen mutually, reforms remain an ongoing and evolving activity. The study has shown that reforms are underway in most parts of the world in both developed and developing states and Namibia. USA and Norway and in the developing countries notably RSA, Malawi, are good examples in this regard[127] It has also demonstrated that there is no place for both competition and regulation within the industry no matter how small the size of the market may be.

There are no standard answers to complicated questions of reforming markets. The implications of these reforms and implementation strategies for transparency in the regulatory systems, and improving accessibility of electricity, are yet to be seen. The study has identified the drivers of reform which are different from developed to developing states. It has also proven that successful reforms require an understanding of the source of monopoly power in the industry, as well as the size and characteristics of the market. It requires a transparent and clear regulatory framework capable of separating each role of the stakeholders clearly, separating competitive elements from natural monopoly elements.

With regard to Namibia, there seems to be a greater and most significant part played by political factors in the design of the implementation as well as the envisaged success. Institutional aspects are important and relevant to determine the overall profile of the ESI reform programme. Consequently, the various stakeholder groups particularly

[127] Place for both competition and regulation within the industry no matter how small the size of the market may be.

NamPower, the MME and local authorities, in there form agenda have affected the pace, the decision-making and the implementation of the reform agenda.

> The reform did not suggest implementing a free trade model; what it did was to introduce competitive elements into a cost-based supply oriented infrastructure. To a large extent, even if the Single Buyer is formally introduced and all REDs established, NamPower remains vertically integrated. NamPower may lose its monopoly in generation.[128]
>
> Consolidation of the EDI into REDs has the consequence of addressing the remaining fragmentation. A large degree of economy of scale would be achieved, and while it cannot bring customers, choice competition by comparison or benchmark competition would be achieved. This will result in the possibility of horizontal effectiveness and efficiency. Legislation or amendments might be needed to address national issues, and the ECB would have an important role in assisting in the achievement of electrification and other national targets.

It is too early to judge whether the reform process will be successful - much will depend on whether the objectives for reform are met. The concern in Namibia is that thus far no specification or criteria to be used for judging the failure or success of the reform initiatives has been discussed or developed.[129] Neither has there been any review or evaluation of what has been achieved since 1998 and the success or failure thereof.

With regard to the Market Reform, the study has shown that the market need only fit the size of the Industry but it must be able to deliver on the rationale and reform initiatives.

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[128] A concern among stakeholders exists that the notion of the Single Buyer being hosted in NamPower, and using the NamPower balance sheet, will further strengthen NamPower's dominant position and may be used to introduce barriers to entry in that NamPower will tend to favour its own generators.

[129] To the author's knowledge, it has also not been done in the other SADC countries where reform is being introduced.

For competition to be realized it is imperative that the essential requirements as discussed must comply with certain principles of administrative law such as natural justice, fairness and avoidance of ultra vires doctrine[130]. Until such time that there is an equivalent of a workable competition, the Namibian ESI market will have to have regulatory oversight over the non-competitive segments of the industry. The challenge is for the Regulator(s) to balance the need between regulation and the temptation to stifle the emergence of competitive forces and innovation to have clear rules and regulations, indicating what the rules of the game are and the consequences if those rules are breached. The Government of Namibia has put a reasonably well detailed Policy and Legislation in place. However, the study has found shortcoming with regard to the legal and regulatory framework as summarized under.

Some of the shortcomings of the Electricity Act of 2000 have now been addressed by the Electricity Bill of 2005. Similarly, the Regulations issued in terms of the Act will be amended. A Namibian Grid Code will also be published. It remains debatable whether the Single Buyer Model is the right model to deliver the introduction of competition and to transition the country to a Multi-Seller-Multi-Buyer (MSMB) market.

The study has established that the "*bright line*" between the functions of the ECB and those of the Competition Commission's is increasingly blurred by events. Thus, the issue of who is going to control competition is not simple either – or, the "*bright line*" between the two may have to be completely re-evaluated and re-drawn.

Reform is an ongoing process and in Namibia it is still in its early days. Evidently, there seems to be a long period of transition from monopoly to properly functioning markets.

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[130] [For the full discussion on the Administrative requirements see Marinus Wichers Administrative Law pages 183 to 260. Also see Chief Constable Pietermaritzburg V Ishim (1908) 29 NLR 338 at 341]. . Much depend on the starting point, including the generation capacity and the trading options within a particular country.

Significantly, the study has analysed the relevant laws and regulations. The relevant provisions of the Namibian Constitutions in particular, have been discussed under appropriate headings. Special emphasis has been placed on the Electricity Act of 2000. The study has also suggested recommendations on the legislation which require amendment.

7.2 Recommendations

The following recommendations are submitted:

(a) There are key elements in the reform process which require clear definition. These include the power sector ownership, its institutional structure and regulatory structure[131].

(b) Circumstances surrounding the industry have changed since 1998. There is a need to review the White Paper on Energy to address the gaps, the contradictions and the present needs affecting the industry significantly, most of the graphs contained in the Electricity Act of 2005 are addressed by the Electricity bill of 2005. [132].

(c) If Government wishes to expand the scope for competition while still retaining a sizeable portion in public hands, key policy objectives which include the improvement of efficiency and its important linkages such as security of supply, environmental protection as well as to ownership should be clarified.

(d) Whilst it is essential for the State not to completely disengage from the sector, genuine private sector participation can only be achieved once clarity of how that will be implemented is articulated.

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[131] Policy makers sometimes fail to appreciate the difficulties inherent in creating an electricity market, due to the physical realities of electricity production and consumption.[131] It is therefore essential that current decisions are part of a long-term strategy in which technologies and skills appropriate for the future are developed.

[132] The Electricity Bill of 2005 is attempting to address some concerns.

(e) Government should review critically, and at regular intervals, whether the policies, and the legal and regulatory framework, are still adequately serving its objectives, or whether regulation is still needed to meet the underlying objectives. Where the need for regulation remains, the mechanism chosen should be competitive market compatible.

(f) The success of the ESI will depend on the successful implementation of the distribution industry structure. There is a need to formulate uniform policies on the establishment of the REDs, especially on issues of revenue, governance, ownership and shareholding. This will ensure clear rules and a robust industry.

7.3 Direction and certainty

In order to implement the above stated recommendations effectively, it is advisable to attend to the following:

(a) Government should establish an Electricity Planning Unit to coordinate recommendations of the Summit and long-term ESI planning and develop a proper integration between grid and off-grid electrification. An appropriate electrification financing system should ensure that off-grid technologies play an appropriate role in the promotion of electricity to rural households.

(b) Policy makers sometimes fail to appreciate the difficulties inherent in creating an electricity market, due to the physical realities of electricity production and consumption.[133] It is therefore essential that current decisions are part of a long-term strategy in which technologies and skills appropriate for the future are developed.

(c) The policy role of Government and the regulatory role of the ECB need to be clarified. Further, the scope of the ECB's jurisdiction as economic regulation request clarification. The Electricity Act needs also to be amended to clarify

[133] It is non-storable, if not very expensive to store; it is subject to rapid changes in demand; there are pervasive externalities on the grid, for example, physical failure at one location can cause the collapse of the entire grid supply (the 2003 New York blackout); its demand and supply must be balanced on a real-time base; demand can be very unresponsive to price increases.

whether the ECB's jurisdiction includes non-electricity energy sources. Currently the Gas Bill is being drafted. In terms of this Bill reference is being made to the establishment of Gas Regulatory Authority Sec 4(1).

(d) The Government, through the MME, needs to refine and clarify its regulatory policy objectives, and establish where the primary public interest lies. There is a need to be clear about the objectives of the reform programme. An effective mechanism for this is the promotion in the long-term of different types of competition where these are feasible and cost-effective[134].

(e) Government needs to pay attention to human resources within the industry, more so within its own institutions, to enable it to cope with the complex and reform industry.

(f) There is a need to identify and clarify the scope and type of economic regulation which will assist in meeting the fundamental objectives of the reform;

(g) Government needs to review funding, skills and staff numbers for the ECB and MME

(h) define the regulatory approach as "light-handed", with as much self-regulation and cooperative regulation through stakeholders as appropriate;

(i) expand regulatory duties to other utilities over time. The Water Act of 2004 has established a regulator of Board consisting of 5 members, but the priorities have not yet been implemented. The Gas Bill is still at …..stage. In this regard, constitution should be given to the question whether there is a need to have more than one regulator in Namibia.

(j) With regard to the regulatory structure, the independence of the Regulator from commercial and day-to-day political pressure, it is essential, that there needs be an arms-length relationship between the ECB and the Ministry of Mines and Energy,

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[134] For generation and supply, the main focus should be on product market competition. This then implies that an objective of, and a duty on, the Regulators, is the promotion of competition in the industry

as well as between the ECB and other market participants. Therefore, there is a need to set a time-table for regulatory independence through legislation.

(k) The ECB should operate under and independent Minister as a separate and autonomous body once a basic framework is in place. This will separate the role of a regulator and shareholder.

(l) There is a need to revisit the decision to adopt the SB, both in terms of its necessity, relevance and timing.[135] Government must monitor the issue of security of supply, given the country's precarious situation on generation, within the new framework of reform and the desire to introduce competition.

(m) Tariff methodology and tariff structures must be understood and reviewed to the levels where investors will have confidence in investing and consumers' interests will be protected. Cost reflectivity of tariffs throughout the value chain therefore becomes imperative. There is a need to exercise particular care with subsidies and cross-subsidies, as they distort economically efficient behaviour and pricing[136]. Until now, most of the rural electrification was funded by NamPower[137] or through NamPower organised funding.[138] The issue of rural electrification and access to the poor needs coordinated and integrated planning.

(n) The general competition law should be applied to the electricity sector, except for those aspects which are covered by rules specific to it. In this context, decisions concerning specific roles of the ECB and the general Competition Authority in promoting competition must be taken.

The regulatory framework must be flexible enough to change with the changing role and scope of regulation over time.

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[135] Adequate competition will only be established if the ownership and structure are addressed and if the regulatory framework is non-discriminatory, transparent and provides sufficient information to market participants. In addition, one needs excess generation capacity of between 20 to 25% (which Namibia does not have), because sustained competition is always vulnerable to a generator not being able to operate for the bidding period concerned. There must be many competing generators and high current prices in generation and supply, an access to the grid or a well-connected and unconstrained grid.

[136] While the reality of the country's situation is such that they cannot be avoided, there is a need for subsidies to be transparent and linked to clear policy objectives. There is thus a need to develop a methodology for rural electrification planning as part of integrated rural infrastructure planning aimed at achieving the highest electrification of rural areas. The methodology would enable decision-makers to understand how electrification can support development, and would provide guidelines on how to target and prioritise areas and how to integrate with local end-users and local development planning.

[137] Through its performance agreement commitment.

[138] Concessionary funds through its 400KV long-term loans.

Moreover, the framework needs to recognise the emergence of a regional market through the SAPP. The possibility is more likely to be part of a larger regional electricity market. It is thus imperative that the rules governing that market are beneficial to Namibia.

NamPower has opted for a gradual reform process which will lead to a gradual and continuous electricity sector transformation, involving private sector participation bringing in new skills, technology and management techniques, all aimed at more efficient operation and management of the industry. Namibia was fortunate to learn from the experience of first movers. The wealth of international and regional experience in reforms can be adapted to suit the country's peculiar circumstances and history.

Annexure A

Namibian Regulatory Arrangements Compared to Ideal Regulatory Framework

Characteristics of ideal policy and regulatory framework	**Characteristics of Namibian ESI**
Enabling legislation	**Yes, Electricity Act, 2000**
Presence of Regulator	**Yes, the ECB**
Clear Roles and Accountabilities	**No**
Clear information about who creates policy and who implements it	Limited
Defined policy scope of regulation	Not defined
Independence of the Regulator from Government	No
Effective service delivery	Yes
Effective planning and oversight	Variable
Effective organisational structure for Government policy and regulatory agencies, and adequate resources	**No**
Clear organisational structure – sometimes consolidation of regulatory duties	The ECB is for electricity only
Adequate funding	Unclear if funding is adequate
Adequate skills	No
Adequate staff numbers in Regulator's office	Unclear if staff numbers are adequate
Clear formal and informal relationships within industry and with other relevant parties	**No**
Memoranda of Understanding and Performance Agreements in place between Government/Regulators/Licencees	O, only 1996 Performance Agreement between NamPower and the Government
Technical and Commercial Agreements between industry parties	Limited agreements in place
Associations and alliances	Limited alliances
Transparent and open regulatory decision-making processes	**Limited**
Clear decision-making processes	Limited
Consistent approaches and timelines between Government and Regulator	Unclear
Transparent decision-making	Not really – public meetings inadequate
Consultative processes	Partially
Appeals process for regulatory decisions	Enabled only
Effective Regulation	**Being developed**
Flexible regulatory instruments	No, mainly legislation and licences
Adequate means of enforcement	Yes
An assessment of regulatory impact upon stakeholders and industry as a whole	No
Regulatory review	Limited

Source: ESI Summit Report (2000)

Annexure B

SAPP Installed Generating Capacity MW

Country	Hydro	Coal	Diesel	Nuclear	Geothermal	Total Capacity
Swaziland	41	-	10	-	-	51
Lesotho	75	-	0.84	-	-	76
Botswana	-	132	-	-	-	132
Uganda	301	-	2	-	-	303
Malawi	284	-	21	-	-	305
Namibia	240	144	3	-	-	387
Tanzania	562	4	336	-	-	902
Kenya	677	-	409	-	57	1.143
Zambia	1632	-	9.75	-	-	1.642
Zimbabwe	750	1.295	-	-	-	2.045
Mozambique	2.184	-	199	-	-	2.383
South Africa	2.061	37.678	342	1.930	-	42.011

Source: Dr Willa Le Roux (2003)

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