

**ZIMBABWE'S NATIONAL ENERGY POLICY CHALLENGES: THE  
CASE OF ENERGY SECTOR UTILITIES.**

**BY**

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May the Almighty God bless you all.

## **Abstract**

This research focussed on national energy policy implementation challenges in Zimbabwe. The government started this programme in 1998 and the most recent amendment for this policy was done in 2012. Over the years Zimbabwe's National Energy Policy failed to bring the desired results. Presently, the nation continues to suffer from this failed policy as it faces a lot of problems emanating from the energy crisis: loadshedding, blackouts, reduced industrial production, deforestation, etc., to mention just a few.

The study explored energy challenges in Europe, the Western World, Asia and Africa before crystallising the problem in Zimbabwe. There were differences in the nature of the challenges mainly because of geographical location, energy resources and the growth and state of the economies. A qualitative methodology using semi-structured interviews was used to gather data.

In Zimbabwe, results showed that the bedrock of the energy crisis is funding. Institutional barriers, government policies, regulations, company structures infrastructure, corporate governance, human resources, shortage of skills, and remuneration are all at the core of these barriers. The research concluded by offering policy; managerial; and methodological recommendations to this body of knowledge.

## **Dedication**

I dedicate this research to my children Victoria, Vincent, and Vanessa, to follow the path of serious study that their father has followed over the years.

## ABBREVIATIONS

GDP	Gross Domestic Product
IMF	International Monetary Fund
IPPs	Independent power producers
Min. EPD	Ministry of Energy and Power Development
MNCs	Multi-National Corporations
NEP	National Energy Policy
REA	Rural Electrification Agency
SADC	Southern African Development Community
ZENT	ZESA Enterprises
ZERA	Zimbabwe Energy Regulatory Authority
ZESA	Zimbabwe Electricity Supply Authority
ZETDC	Zimbabwe Electricity and Distribution Company
ZPC	Zimbabwe Power Company

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# CHAPTER ONE

## Dissertation Introduction

### 1.1 Introduction

The study seeks to analyse Zimbabwe's national energy policy (NEP), a brainchild of the Ministry of Energy and Power Development (Min. EPD). The focus will be on policies which were drafted since 1998, although the investigation will not be a time series analysis or on a year by year basis. The major aim is to investigate the policy and its amendments, then identify challenges in its implementation, as faced by the energy utility companies, notably the Rural Electrification Agency (REA), Zimbabwe Electricity Supply Authority (ZESA), and other independent power producers. These companies will be the groups of informants or case studies. The Min. EPD will also be taken as a source of data, or case study. The first energy policy was drafted in 1998 and has been amended several times, culminating in the most recent one in 2012. Factors such as funding, country risks, markets, return on investments, corporate governance issues, government support, institutional barriers, human resources, infrastructure and foreign direct investments will be explored to find out how they impact on policy implementation.

The study will explore literature sources to find out the extent and depth of supporting evidence for the objectives of the study, compare, contrast and critique these then come up with a conceptual framework. The research will theorise the framework initially, then using an inductive approach based on evidence from literature review, will ascertain or differ with this conceptual framework at data interpretation stage. Semi-structured interviews will be used to gather information from companies in the energy sector. Finally, cross-comparisons, data gathering and interpretations will be made to arrive at the conceptual framework after the study. The study will conclude by evaluating the effectiveness of the policy, identifying challenges and inefficiencies in the system, and recommend ways to improve effectiveness and efficiency.

## 1.2 Background Of The Study

From the late 1980's to the middle of the 1990's, the Zimbabwean government realised the importance of electricity supply and energy demand in the rural areas as a way of empowering the rural people economically and improving their standard of living, ("Empowering rural communities and growth points," 2010). The article further states that policymakers were tasked in February 1989 to come up with a country wide rural electrification program which eventually culminated in the 1995 African Development Bank funded rural electrification master plan study. The Rural Electrification Agency was mandated through the Rural Electrification Fund Act Chapter 13:02 (2002) to implement the Expanded Rural Electrification Programme. Its vision is the total electrification of Zimbabwe. The Rural Electrification Agency (REA) works closely with ZESA to achieve this ("Synergies of utilities in rural electrification," 2010).

Supporting the observations on key dimensions affecting the policy implementation challenges and the associated effects:

*"ZIMBABWE could be losing hundreds of millions of United States dollars per month due to the intermittent power outages....and are costing the country in income, jobs, tax revenue and competitiveness, The country needs about 2 200 megawatts (MW) of electricity but local generation is failing.... Only 1 300 MW are being produced, with the balance having to be imported. ... 'The power cuts are wreaking havoc on industry....— and particularly those who manufacture sensitive products,' said Charles Msipa, president of the Confederation of Zimbabwe Industries", (Financial Gazette, 2013, p. 12).*

Unstable power supplies are causing companies to incur heavy losses as some processes are interrupted thereby affecting the quality of products; some processes are then delayed or aborted resulting in failure to meet deadlines and targets for many companies, ("Counting losses of power deficit," 2013). Historically, according to the same article, during the 1960s up until the late 1980s, electrical power was

sufficient to meet demand and there was excess capacity which was offered at very low tariffs to Zimbabwean companies. When the population grew and power demand rose in unison, there was no longer excess capacity and tariffs became economic, (Lund & Mathiesen, 2007). Further, they argued that companies then lagged behind in carrying out efficient utilization of power measures and they suffered by paying high costs of actual electricity usage plus losses. Ultimately such maximum demand companies like ZimAlloys in Gweru, Mutare Board & Paper Mills, Sable Chemicals and Ziscosteel in Kwekwe, became very inefficient, operated at less than 50% capacity, or completely shut down in the 2000's, ("Capacity Utilisation in the Manufacturing sector," 2013).

The noble ideas in power energy projects that have been put forward so far by experts in the field of energy in Zimbabwe have failed to yield the desired results, as characterised by constant and persistent load shedding and blackouts by Zimbabwe Power Company (ZPC), (Mamhare, 2007; & Musango, 2011).

The (NEP) was crafted by the government of Zimbabwe through the Min. EPD. The NEP outlines the modalities in the exploitation, distribution and utilization of various energy resources. The NEP contains strategies to convert the policy objectives into specific measurable targets and actions so as to empower stakeholders to contribute towards the resolution and prevention of the recurring energy blackouts that have been haunting the country, (NEP, 2012). The strategies are aimed at identifying and closing the gaps between policies and practice and proffer specific and measurable recommendations.

The NEP focusses on strategies for the exploitation, distribution and utilization of energy resources whereas this study explores the policy implementation challenges. In other words, the policy strategies have been well-laid out but this study explores the difficulties, challenges and barriers to actioning these strategies. The government, through the Zimbabwe Energy Regulatory Authority (ZERA), has empowered 12 independent power producers (IPPs), but despite this, energy woes

continue to worsen (“Energy Woes Haunt ZESA,” 2013). Furthermore, the study seeks to find out why there is insufficient investment in the energy sector. External market factors such as the continued world economic recession, volatile commodity prices, and the effect of sanctions are negatively affecting the performance of the economy, according to the Consumer Council of Zimbabwe (2013). Successful implementation of energy projects can only be premised on a cash budget basis, (Menanteau, Finon, & Lamy, 2002).

### **1.3 Study Context**

Zimbabwe has been making frantic efforts to arrest the energy crisis through the National Energy Policy, since 1998. However, despite the noble ideas presented in the policy, it is the implementation of the policy which continuously derails the efforts by the government, according to Madubansi, and Shackleton (2013). This study seeks to identify the implementation challenges in order to find solutions, as emphasized in the latest NEP (2012) paper by the former Minister of Energy:

*“I am in no doubt that the NEP will be instrumental in developing and accelerating the economic activity of the country, ... the NEP will achieve its main objectives, which are: to increase access to affordable energy services to all the citizens of Zimbabwe; to contribute to the eradication of poverty; to stimulate sustainable economic growth; and to reduce the country’s heavy dependence on energy imports”, (NEP, 2012, p. iv).*

Reddy (2011) as well as Manfred, Mondal, and Mezher, (2012) argue that the barriers to energy efficiency are: the poor, the ignorant, the helpless, the uncertain, the indifferent, the inheritors of inefficiency, the supply-obsessed financiers, the energy-products manufacturers and financial institutions who are afraid of risky innovations. Following from the factors mentioned, this study will focus on these implementation challenges which characterize and affect the Zimbabwean energy market. In the Western world these kinds of barriers exist but not to the same extent as in Africa, (Cory, Couture, & Kreycik, 2009).

Maarten (2012), Boyle (2004), and Weber (2011) agree that the world today is under threat from carbon dioxide emissions, and the thinning of the ozone layer. The Zimbabwean economy has an average GDP \$6 billion per year, therefore more effort has to be directed towards improving the capacity of energy sources rather than energy uses as revealed by Mamhare (2007). Jaffe, Newell, and Stavins, (2004) reiterate that the other failures in energy use are markets and the environment.

Owen (2006) argues that there is insufficient investment in renewable energy because of higher cost of renewables, lack of access of renewables to the grid and also considered the fact that renewable energy far falls short as a source of primary energy. Although Owen's arguments are factually correct, however, he fails to mention that although renewable energy resources have high setup and installation costs, there are benefits in the long-term because of sustainability and the impact renewable energy sources have on the environment hence the renewables become cheaper overall, (Dresselhaus & Thomas, 2010; Inglesi, 2013; & Musango, 2011). Owen further argues that it is power purchase agreements, competition with low electricity tariffs, and the need for creating markets for green energy that should be the centre of focus.

However, Jaffe, Newell, and Stavins, (2004); Professor Olah (2009); and Larouia, Tellegen, and Tourilovac, (2004) all disagree with Owen (2006) in that there is already a ready market not only for green energy, but for all forms of energy and power purchase agreements are not problems. The major problem lies in finding and funding the energy sources in Zimbabwe, (Arnold & Quelch, 2013). With reference to Zimbabwe's NEP, the government tried to address energy challenges by making sure that the policy provided for the following:

- extending an accelerated electrification programme to the rural population;
- making sure that the poor have access to clean reliable forms of energy;



- widen access to adequate and affordable energy services to urban and rural households;
- cleaner and safer forms of energy for low income households'
- and, expanding renewable energy sources like solar mini-grids and promoting alternative energy technologies like biogas, blending of fuel, etc.

#### 1.4 **Research problem**

Zimbabwe's main power energy producer, ZESA, alongside other smaller independent power producers, provides only half of the total energy national requirements both for domestic and industrial consumption, ("Meeting the challenges: Zimbabwe," 2013). Institutions are not investing sufficiently enough in power projects to sustain the population's energy requirements. The National Energy Policy outlines how energy sources can be harnessed, utilized, funded but there is little emphasis on the implementation challenges, (NEP, 2012).

The Zimbabwean population is in dire need of affordable, sufficient, and reliable 21<sup>st</sup> century energy sources and this has remained a major challenge to the government and its parastatals, particularly ZESA, ZPC and REA, ("Meeting the challenges: Zimbabwe," 2013).

Several studies were done worldwide and regionally, but this research contextualizes the energy implementation challenges within Zimbabwe since 1998 although this will not be a time series analysis. The purpose of this study is to further analyse and explore National Energy Policy options in terms of factors affecting policy implementations and eventually recommend solutions to these policy challenges. The study will come up with solutions to the factor of insufficient investment in energy. This research will also test whether the skills base in utility companies are sufficient, competent and skillful enough to deliver the promises outlined in the energy policy transparently, fairly responsibly and in an accountable and ethical manner. The energy markets will be explored in terms of level of investment, risk and profitability. Finally, the infrastructure will be assessed to find

out whether it is technologically advanced enough to support the investments in the energy sector.

### **1.5 Research objectives**

The major objectives of this study are to:

- identify national energy policy projects implementation challenges faced by energy sector companies;
- analyse the national energy policy framework in terms of market creation, return on investment, profitability, sustainability and long-term commitment by policy makers;
- identify and explain reasons for insufficient investment in the energy sector in Zimbabwe;
- Explore energy sector companies' financial, material and human resources availability
- Explore commitment at government, corporate and individual levels.
- recommend solutions to problems and factors affecting energy policy implementation.

### **1.6 Research questions**

The questions that will be answered at the end of this research are:

- What are the major challenges faced by Zimbabwe energy sector companies in implementing the national energy policy?
- Are the market risk factors and trends in the energy sector conducive for investments, profitability, and sustainability?
- Is there a long-term commitment at government, corporate, and individual levels?
- Are the utility companies sufficiently resourced financially, materially and in terms of human resource skills?
- Why is there little investment in capital projects for the energy sector?

## **1.7 Research proposition**

This study proposes that the major challenge faced by the nation at large and particularly REA in power development and energy policy implementation has been institutional barriers, as well as a market which does not provide a fair return on investments in the energy sector, characterised by poor tariffs, and market failure. Further propositions are that lack of meaningful progress in implementing the energy policy has been caused by the lack of capital investment not only in electricity power generation but also in other alternative sources of energy e.g. solar, biogas, biomass and biofuels.

The study also maintains that parastatals are partly to blame in contributing to the depressed investments in the energy sector due to poor funding, monopolistic tendencies, management inefficiencies, agency problems and other corporate governance issues.

Lastly, it can be proposed that the other challenge has to do with individuals within organisations. Basically this is linked to bad corporate governance, lack of transformational leadership, and morally unsound and poor business practices from the corporate level to the shop-floor. Due to the large capital outlay involved in energy projects and the long time to realize a return on investment in the projects, the new business model world-wide born out of the 2008-2010 World recession has been “small profit quick return” short-term loans at high interest rates as opposed to conventional ways of doing business in finance sector.

Further, due to country or political risk, the African Development Bank has been biased towards giving loans to countries in the sub-region as compared to Zimbabwe and the country owes the IMF and World Bank in excess of US\$10 Billion such that approaching these institutions for funding would most likely be unsuccessful.

## **1.8 Justification of the study**

Zimbabwe continues to have a chronic problem of inadequate power supplies, yet there are sources of energy such as solar, biogas, coal, and hydro-power. Energy is a key driver of macro- and socio-economic activities. Energy costs are push factors in the pricing of basic commodities, ("Meeting the challenges: Zimbabwe," 2013). This study will identify challenges in the energy policy implementation, as well as inefficiencies, and possible solutions to the problems. The study findings are expected to benefit Min.EPD, energy utility companies and policymakers.

Despite the interest in the energy sector by both the public and private sector, the nation continues to face problems in attracting foreign direct investment for capital projects in the energy sector, and this study seeks to identify the reasons why.

Due to the energy deficit, ZESA has resorted to massive load shedding to balance power supply, ("Meeting the challenges: Zimbabwe," 2013). On the other hand, this load shedding impacts negatively on manufacturing companies. To this end, they do not operate at full capacity and as a result, this leads to company closures or relocations to neighbouring countries in the SADC region. This ultimately worsens the macro-economic problems such as unemployment, liquidity challenges, depressed financial markets and low investor confidence the country is currently facing, according to the IMF Report on Zimbabwe, (2013).

## **1.9 Scope of the study**

This research will be limited to exploring aspects of the NEP that deals with the process of project implementation. 4 companies namely ZESA, REA, and Alphasdetail including the Ministry of Energy will be used as sources of information in exploring the challenges. Respondents located in Harare only will be interviewed and the period under review will be 2002 to date, although not on a year by year basis. Sources of energy that will be reviewed will be hydro-power, thermal power, and solar power.

### **1.10 Organisation of the dissertation**

The dissertation is arranged in five chapters. Chapter One is Introduction, Chapter Two is literature review and Chapter Three discusses methodology, and data collection. The fourth chapter analyses and interprets the data collected, while the fifth and final chapter concludes the research and discusses results then recommends solutions to the problems.

### **1.11 Summary**

This chapter was introductory and the model or conceptual framework proposed was like groping in the dark. Justification, objectives and questions that need probing were outlined here but the next chapter will dwell on literature review, that is, what has been researched so far on the subject by different studies and writers, the gaps omitted by previous studies on the subject and what direction the study will take in coming up with a model on NEP implementation challenges.

## **CHAPTER TWO**

### **Literature Review**

#### **2.0 Introduction**

This chapter reviews literature sources, the models and concepts of energy implementation challenges in general and closer to home in Zimbabwe. The study analyses the models from literature and then shows the model which was proposed for study and later on in Chapter 4, will test this model against research information from respondents. The section also identifies the literature gaps left by many authors in the field of energy policy and thus contributes towards this body of knowledge. Our main theme and focus is on national energy policy implementation challenges. The Chapter begins with factors affecting implementation challenges in general. Later, the chapter discusses those problems prevalent in Europe, Asia, and Africa then focusses more on those in Zimbabwe. Literature review is explored in terms of research objectives. Factors are then summarized and then grouped to form a conceptual framework.

#### **2.1 Factors affecting the project implementation process**

Obstacles are defined as “persons, patterns of behaviour, attitudes, preferences, social norms, habits, needs, organisations, cultural patterns, technical standards, regulations, economical interests, financial incentives, etc.,” (Weber, 1997, p. 834). Taking this definition further, obstacles are those factors affecting NEP projects implementation or those impediments, barriers, hindrances, stumbling blocks and any kind of problem which stops or prevents the successful implementation of power energy projects. The focus will be on those factors from 1998 and the focus will be on Rural Electrification Agency. To support this research, informants will be taken from other utilities as well. Briefly, these factors, according to Azoumah, Yamegueu, Ginies, Coulibaly, & Girard, (2010) and Weber (2011), are financial resources,

energy market risks, transaction costs, and institutional barriers, these factors will be discussed next in light of study objectives.

### **2.1.1 Underpinning theory: major challenges affecting energy projects.**

Institutional barriers are at the centre of policy implementation challenges, (Driffill & Owens, 2006). This fact is supported by Bruce (2003), Owen (2006), Smith and Merritt, (2002), and Reiner *et al.*, (2004). Other factors affecting project implementation are market risks, country risk or political risks, energy resources availability and sustainability, (Owen, 2006; Marktanner & Salmann, 2010; Martinot, Dienst, Weiliang, & Qimin, 2007; & Helm, 2005). Other researchers differ from the above and mention organizational or within firms problems, market inefficiencies and lack of profitability of energy investments, according to Alfstad *et al.*, (2006), Firestone and Kempton (2005), as well as Madubansi and Shackleton, (2013).

### **2.1.2 Major energy projects implementation challenges in Europe and the West**

Briefly, factors affecting the implementation of energy projects in Europe are (a) liberalisation of electricity and gas markets, (Helm, 2005; Bullard & Herendeen 2005); (b) no integrated European market, and (c) lack of competitiveness, Bullard & Herendeen (2005); (d) low world energy prices, (e) oil price shock, (f) security of supply, (g) climate change, and (i) world recession, (Ola, 2009).

Furthermore, security of supply for energy is threatened by too much reliance on gas from Russia and long pipelines which pass through politically dangerous territories, according to Helm, (2005). Helm further states that ageing oil refineries and power stations threaten sustainability and viability of energy projects. The other problem facing energy projects in Europe is the poor interconnection between European electricity and gas grids, (Torriti, 2008). Menanteau, *et al.*, (2002) also mentions that the first generation of nuclear power plants is nearing the end of its life cycle, and European countries are considering new investments in alternative energy technologies. Bruce (2003), Reiner *et al.*, (2004) concur that in Europe, Asia, North Africa and particularly America, governments are becoming more liberal and

opening up to private players when crafting policy, especially, policies to do with the environment, minerals and energy projects.

Armaroli and Balzani, (2006), compared the social impacts of energy problems in the West, Europe, the Middle East, Asia and Africa thus:

*“There is ... parallelism between overconsumption of energy and food. The nation with the highest number of overweight or obese people... is also the one with the highest energy consumption per capita... An American consumes as much energy as 2 European, 10 Chinese, 20 Indian, or 30 African people.... energy inputs increase inefficiency of personal life (obesity) as well as of social life (traffic jams), cause more waste, boost medical expenses and, last but not least, increase inequality,”* (p. 4).

### **2.1.3 Major energy projects implementation challenges in Asia**

According to Chaurey, Mohanty, and Ranganathana, (2004), Helm (2005), and proceedings report to the Institute of Energy Agency (2004), the price of oil and gas is the biggest challenge facing energy projects in Asia. Other obstacles are the price variation of electricity, a price which reflects the price of gas, according to Frondel and Peters (2005), supported by Helm, (2005a). Furthermore, Helm (2005b) reiterates that other challenges in Asia include the need for market regulatory frameworks as well as a competition policy. Climate change affects security of energy supply in that there is need to stabilize greenhouse gas emissions, (Chaurey *et al.*, 2004). In the same vein, the Kyoto targets, in terms of global warming trends, are proving difficult to achieve. Helm (2005) and Sheng, Shi, Zhang, (2012), go on further to say that the majority of electricity assets are based on fossil fuels which are difficult to replace.

According to Chapman and Cooper, (2009), and Sheng *et al.*, (2012), the biggest challenge in the world today in the field of energy is to satisfy and meet the rising energy demand in firstly China, then India, followed by Japan, Taiwan, South and



North Korea. Chaurey *et al.*, (2004) further qualify this concept by saying that this energy demand is caused by rapid economic growth with consequent urbanization and industrialization. However, Herzog, McFarland, and Reilly, (2002), and Sawin (2004), argue that in Asia the rising energy consumption in the Asia-Pacific region is caused by huge disparities in the GDP per capita compared to energy consumption per capita.

#### **2.1.4 Major energy projects implementation challenges in North/West Africa**

Energy policies in North Africa are totally different from the policies pursued in the rest of Sub-Saharan Africa, because most of North Africa has slightly different sources of energy as compared to the rest of Africa. North Africa relies on oil, gas, and coal and to a lesser extent, nuclear power. According to Marktanner and Salman (2010), most of these energy sources are fossil fuels and currently are fast dwindling and hence the focus of policies in North Africa is in harnessing energy from nuclear power and renewable energy sources. In northern Africa, renewable energy technologies are more expensive than fossil fuels, and this adds to competitiveness, according to Bazilian, *et al.*, (2012). Briefly, problems facing utilities in Africa are thus:

*“The obstacles ... (i.e., financing, planning, governance, and human and institutional capabilities), ... a lack of effective institutions, good business models, transparent governance, and appropriate legal and regulatory frameworks. ... In fact, if current trends continue, more people in Africa will be without access to modern energy services in 2030 than today...”* ( Bazilian, 2012, p. 1).

In Sub-Saharan Africa, according to Ambali, Chirwa, Chamdimba, and van Zyl, (2011); Azoumah, Yamegueu, Ginies, Coulibaly, and Girard, (2010), and Karekezi, (2012), electrification rate is one of the slowest amongst developing countries, and the next section looks at the African sub-region.

### **2.1.5 Major implementation challenges in East, Central and Southern Africa**

Energy projects in East and Southern Africa major in five major renewable energy technologies, namely: large-scale and small scale biomass energy; solar photovoltaic and thermal; and wind, according to Karekezi, (2012). Because of these sources, energy policy challenges will slightly differ with those in Zimbabwe, (Madubansi & Shackleton, 2013; & Musango, 2011). This is validated by Bazilian *et al.*, (2012) who summarize the factors by saying: “*Still, it is recognised that ‘bankable’ policy and investment decisions necessitate more detailed and complex analysis and planning down to the level of individual power plants and related transmission and distribution infrastructure.*”, ( p. 16).

Mamhare (2007) analyses the energy situation focusing on market structure, regulatory frameworks, and competition. Sawin (2004) departs from this view and instead looks at the energy crisis from a policy review standpoint, especially, the harnessing of energy sources instead of discussing markets and frameworks. One of the challenges is risk management, especially political, economic and country risk, (Kangari and Riggs, 2011). However, Bazilian *et al.*, (2012), as supported by Karekezi (2012) and Musango (2011), provide a different point of view when they say that the problems of energy implementation in Zimbabwe are financing sources, planning and budgeting, corporate governance, and human resources and institutional capabilities. However, Mamhare (2007) and Helm (2005a) opine that the most recent reforms of re-regulating African national societies appear to have the shortcoming of permitting sustainable development objectives and the initiation of norms and standards based on the protection of the environment.

Azoumah *et al.*, (2010) gives a slightly different perspective on energy implementation challenges. Their approach is on electricity infrastructure, which is more relevant to the prevailing situation on energy in Sub-Saharan Africa, particularly Zimbabwe. It was mentioned that problems affecting hydro and thermal power electricity generation includes the following, according to Azoumah *et al.*, (2010):

- (a) lack of high voltage transmission and distribution grid network in all areas;
- (b) minimal interconnection between regional grid networks;
- (c) lack of proper professional management for existing generating plants;
- (d) and weak research initiatives by the private sector in bringing electricity to households.

Armaroli & Balzani (2006) provide one way of looking at energy implementation challenges by emphasizing the fact that in African energy sectors, for biofuels and biomass, rapid deforestation is chewing up forests to the detriment of firewood users in rural and peri-urban areas. For alternative energy technologies like solar mini-grids, the challenge is not only money but the intermittent nature of the sun has characteristics which are difficult to predict and profile, according to Breukers and Wolsink (2007). For renewables, the challenges for implementation become worse when issues such as short circuits, thefts, adverse weather conditions, not only cause disruptions, but entirely destroy electronic components such as inverters and charge controllers, (Rabl & Zwaana, 2004; & Berry & Jaccard, 2011).

## **2.2 Market trends and risks**

As Owen (2006) observed, "*Scale economies and learning benefits have not yet been realized*" (p. 633). Furthermore, he adds that price distortions for energy projects equipment have resulted in failure to attach the real value of energy technology products. Reddy (2011) slightly departs from this view when he mentions that the energy market is affected by lack of information which affects implementation in that the availability and nature of energy products would not be available at the time of investment. Levels of internet penetration have improved such that information available on any energy implementation products is readily available on internet sites in the same way one would access the sites in America, China or Italy, (Herzog, McFarland & Reilly, 2002). Transaction costs become uneconomic in the energy market due to costs related to administering a decision to purchase or not to purchase energy projects equipment, (Herzog, 2004; Madubansi & Shackleton, 2013; & Sawin, 2004). This fact finds relevance in Zimbabwe because of political risk, (E. Bloch, personal communication, November 26, 2013).

As a qualifying argument on risk, there is a different kind of risk in the energy market termed buyer's risk whereby perception of risk is actually different from actual risk, (Owen, 2006; & Musango, 2011). There is also the difficulty in predicting future market trends on the stock exchange, (Kamp, Mondal, & Pachova, 2009). The other fact characterizing the Zimbabwean energy market concerns imports. The markets in Zimbabwe have been flooded with cheap imports from the Far East, as compared to durable Western products, (Musango, 2011). Kramarenko (2010) also points out that due to political instability and the ever-changing political environment, the energy projects are threatened by nationalization from developing countries' governments.

### **2.3 Energy market profitability and sustainability.**

According to Sheng *et al.*, (2012), countries undergoing rapid economic growth may show relatively higher income and lower price elasticity in the short run of rapid growing countries and price elasticities in the long run. This statement was relevant in Zimbabwe during 2009 to 2011, but since then, the economy has suffered a rapid decline in growth, (IMF Report On Zimbabwe, 2013). The higher income elasticities may impose pressure on energy demand in the domestic and international markets, as characterized the Zimbabwean market, during that period. To explain this further, the huge energy gap in price differences (elasticity) compared to low disposable income for the general populace in developing countries (including Zimbabwe) threatens the profitability of energy projects investments, (Madubansi and Shackleton, 2013; Johnson & Matsika, 2006; Maphosa, 2008; Musango, 2011; & Mamhare, 2007). Another element of energy projects implementation is procurement. When energy projects equipment procurement is assessed, geographical locations play a big part in price determination, (Kramarenko, 2010). Further, he states that for landlocked countries, these extra costs from port and duty charges are worsened by revenue authorities' bureaucracy.

Profit prospects out of energy investments in Zimbabwe are minimal. This fact finds support from Johnson and Matsika (2006) who report that trade barriers, cross-

border import tariffs and lack of regional co-operation within SADC are some of the reasons for insufficient investment in energy projects. The duo further weigh in with the fact that SADC economic integration can potentially facilitate as well as benefit from the expanded production of modern-day biomass and biofuels. The electricity charges per kWh are also very low in Zimbabwe as compared to the rest of the Southern African region, which ultimately makes the return on investment very low, (“ZETDC in dire need of massive re-capitalization,” 2011).

#### **2.4 Financial, material, and human resources**

Herzog (2004), Sawin (2004), Kamp, Mondal, and Pachova, (2009), Maphosa, (2008), Weber (2011), and the IMF Report on Zimbabwe, (2013), all agree that the biggest challenge in project implementation is lack of finance, especially in developing countries. Maphosa, (2008) further qualifies this lack of finance by stating that new trends and technologies in energy, for example, solar products are expensive and transactions costs in procuring these products are prohibitive. Therefore material availability for energy projects becomes reduced as a consequence of scarce financial resources, (Weber, 2011).

Kramarenko, (2010), is supported in his assertion by the IMF Report on Zimbabwe, as well as by Johnson and Matsika, (2006):

*“...Sub-Saharan Africa is characterized by severe poverty, low levels of investment, poor infrastructure, and the crippling socio-economic impacts of HIV/AIDS. Under such dire circumstances, the expansion of bio-energy may seem to have a low priority, and even if it is accorded a high priority, the lack of investment and infrastructure pose formidable obstacles outside of a few countries such as South Africa”, (p. 42).*

This excerpt summarizes the energy sector NEP implementation challenges facing utility companies, in terms of resource availability in Zimbabwe. Musango, (2011)

and Reddy (2011) further emphasize that the US dollar has opened floodgates for other countries to dump their substandard products in developing countries.

## **2.5 Sufficiency of energy sector investments.**

The Doing Business Report, (World Bank, 2013) underlined the importance of reviving the depressed manufacturing sector in Zimbabwe. This is said to be based on improving the business operating environment, cutting the cost of doing business and re-evaluating business models to be in line with the dynamic competitive external environment. This can be achieved maybe within the next decade, (Inglesi, 2013). Johnson and Matsika (2006) argue that policy initiatives should be business and user friendly. Kramarenko (2010) agrees by saying that Zimbabwe has one of the most uncompetitive and worst business environments in the world. He added that the country is unattractive to international financing mainly because of external debt close to \$11 billion. This has resulted in the scarcity of long-term cheap financing for energy projects as opposed to available expensive short-term loans. The International Monetary Fund Report on Zimbabwe (2013) also revealed that:

*“... the economy continues to operate under a very difficult environment characterised by huge demands on a small national budget, the absence of direct budget support, weak institutional capacity, and very low international reserves. Poverty levels remain high and widespread, savings and investment ratios remain low, and formal employment levels and incomes are still low, while the infrastructure gap has remained very high,” (IMF, p. 77).*

This extract reveals the status quo in relation to insufficient investments in Zimbabwe.

## **2.6 Commitment at government, corporate, managerial and individual levels**

Contributing on government policies, Kramarenko (2010) said that Zimbabwe has restrictive labour laws, and high minimum wages which are unsustainable and

uncompetitive when compared to other countries in the SADC region. The knock-on effect of these factors is that it exacerbates industry recapitalization.

Ambali *et al.*, (2011), scrutinized energy policies in Sub-Saharan Africa and concluded that for policies to work, actions and efforts for implementation rest at government's doorstep before private companies and individuals follow suit. However, these provisions have been criticized by the World Bank and IMF who recommend a devaluation of state currency, reducing the tax burden on consumers, removal of price controls and state subsidies on basics and energy needs, lifting of import and export restrictions, and balance budgets, (IMF Report on Zimbabwe, 2013). However, some of these measures are punitive for Zimbabwe in that the cuts will have negative impacts on low income households and over time, we might have, not a simple energy transition, but a growing dichotomy between wealthier households who are able to adopt modern fuels and poorer households, who are increasingly forced to choose biomass alternatives, (Karekezi, 2012). At individual level, Azoumah *et al.*, (2010) and Pollit (2007) argue that in developing countries, rarely is there government support for research and design for energy technologies. Further, they argue that developing countries have deficiencies in managerial skills. Turning to company structures, the research takes a look at corporate governance within utilities.

### **2.6.1 Board Inefficiencies**

Littrell and Ramburuth (2007), Greiner (2010), and Maxwell (2011), agree with the argument that board meetings need to be held once quarterly. The weakness of this rule is that decisions take long to be taken, amended and implemented, Greiner (2010). Having analysed the REA Policy on Board meetings, this research identifies the need for conducting a non-executive session of only independent Directors during the usual scheduled Board meetings, with one session dedicated to the assessment of the Chief Executive Officer, according to Arnold and Quelch (2013). Independent Directors may hold additional executive sessions from time to time, with

or without the Chief Executive Officer present, as desired, (Bell 2001, de Ver & Heather, 2008; & Madzivire 2011).

### **2.6.2 ZESA and REA Board independence**

According to Klein (2002), Kim (2003), Madzivire (2011), Geiger, (2003), and Mitton (2002), boards should be independent. As a matter of policy, the Board according to the REF Act, must have a substantial majority of the Directors being independent and non-executive, as recommended by Hermalin and Michael (2003). The REF Act also stipulates that the independent board members should be local government provincial administrators who are largely “independent” in terms of REA routine affairs.

### **2.6.3 Board Members Term Limits**

The South African Institute of Chartered Accountants (2009); the Cadbury Report on Corporate Governance (2002); and Institute of Directors of South Africa (2002), all concur on term limits. Turning to board composition, according to Naidoo (2002 & 2010), board composition should be balanced to reflect major trades. On a different note, however, whenever a change in the responsibilities of a Director occurs, he or she should offer to resign, (Institute of Directors of South Africa, 2002). A stranglehold on board membership reduces creativity, (Burger & Goslin, 2012). The King III Report as cited in Madzivire (2013) specifies that the maximum term of service of board members should be three years, (Desoky & Mousa, 2012; & Maxwell, 2011). Board members end up forming “cartels” or companies which get favoured in tender adjudications, (Desoky & Mousa, 2012).

## **2.7 Discussion of existing models and frameworks**

The models suggested in literature are several. However, the model relevant to Zimbabwe will be arrived at after conducting the research through interviews, examining reports and ZESA, and REA documents, etc. Daneil & Lutchman (2006); Martinot, Dienst, Weiliang, & Qimin, (2007), discussed energy implementation barriers and frameworks with scenarios based on renewable energy. Martinot *et al*



(2007) then explain that their research model was based on technical-economic opportunities, constraints and challenges or barriers which include integration strategies, and policy experience.

National energy policy prescriptions relevant to Western and Asian countries mainly focus on renewable energy scenarios, (Bhattacharyya, 2012; Bullard & Herendeen, 2005; Campbell, 2003; Marktanner & Salmann, 2010). Other studies conclude that energy resources do not constrain aggregate amounts of renewables, with the possible exception of biomass and biofuels, (Chang & Li, 2012; Chaurey, *et al.*, 2004; El-Fadel *et al.*, 2009, del Rio & Burguillo, 2007; Drennen *et al.*, 2006; & Reddy, 2011).

The energy policies in Europe and the Americas are driven by private players unlike in Zimbabwe where ZESA, ZPC, REA, ZENT are wholly owned by the government, save for a few independent power producers e.g. Hippo Valley, Nyamingura Mini-Hydro, and Chisumbanje, (Cory, Couture, & Kreycik, 2009; Hassan, Leach & Torriti, 2010; Musango, 2011; ZETDC Monthly Bulletin, 2010). Herzog (2004) argues that the communities in Europe are gradually claiming the ownership of energy and environmental policy matters, procedures and process. Hence a stakeholder consultative due diligence process is carried out in crafting energy policies, (Reddy, 2011; & Sawin, 2004). Azoumah, Yamegueu, Ginies, Coulibaly, & Girard, (2010); Matsuo, Yanagisawa, Yamashita, (2012); and Reddy (2011), have argued that barriers in the form of government interference in energy projects have proved to be a major challenge in energy projects implementation in developing countries. No consultation takes place in crafting policy yet Reddy (2011), says: "*A package that is implemented quite often consists of a combination of fiscal incentives, price controls, technical R&D, publicity and educational measures and legislation encompassing public and private sectors, individuals and organizations,*" (p. 776).

## **2.8 Remedial actions for challenges**

Fisher and Rothkopf, (2009); Frondel and Peters, (2005); Dresselhaus and Thomas, (2010) prescribed the following as solutions to energy implementation problems:

- efficient production of energy by utilities – (balancing costs such that the benefit of the marginal unit is equal to its cost; economic efficiency as opposed to energy efficiency; electricity cost being equated to marginal production cost).
- Proper allocation of financial resources for priority energy projects.
- Lower the interest rate throughout the economy, according to Tinbergen, (as cited by Fisher and Rothkopf, 2009), by means of control of monetary policy, (Musango, 2011).
- Severance tax on natural resource extraction, to increase revenue and fiscal inflows for the government to channel it to energy projects implementation, (Azoumah, *et al.*, 2011)
- Control externalities and spillovers, by imposing tariff quotas to private players to dissuade them from importing oil. Azoumah *et al.*, (2011) departs from this argument citing geographical relevance for suitability of solutions.
- Introduce incentives for successful and significant reduction energy forms that pollute the environment, according to Debreu (as quoted by Frondel & Peters, 2005).
- To control market price distortions, electricity tariffs, or price per kWhr must not be based on historical or average pricing but must be based on marginal cost pricing.

## **2.9 Summary of key dimensions (implementation challenges)**

The table below outlines the key factors from literature and the respective sources.

**Table A: Summary of barriers to energy implementation**

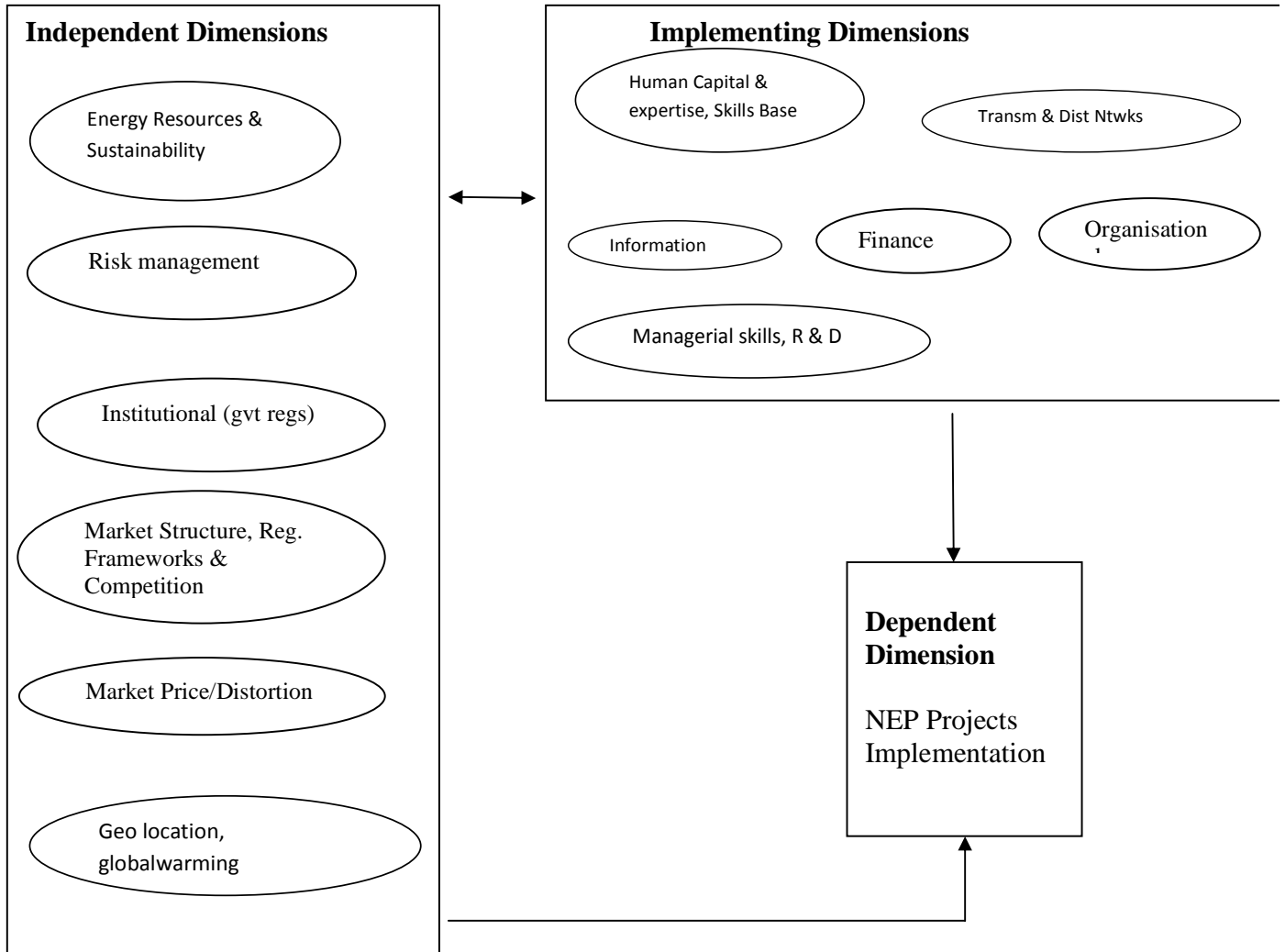
<b><u>Energy Barrier Factors</u></b>	<b><u>Supported By Authors</u></b>
Risk Management (country/political, market)	Owen (2006); Marktanner & Salmann, (2010); Helm, (2005); Bruce (2003); Smith & Merritt, (2002); Matsuo, et al., (2012), Reiner (2004);
Institutional (government regulations, bureaucracy)	Kangari and Riggs, (2011); Chang & Li, (2012);
Organisational	Driffill and Owens, (2006); Chapman and Cooper (2009), Martinot et al, (2007); Ambali et al., (2011).
Market Price & Price Distortion	Weber (2011), IMF Report: Zimbabwe (2013), Karekezi, (2012); Johnson & Matsika, (2006); Kramarenko, (2010). Rabl & Zwaana, (2004), Berry & Jaccard, (2011)
Transaction Costs	Herzog (2004), Sawin (2004), Weber (2011),
Finance & Material Resources	IMF Report on Zimbabwe, (2013), Kamp, Mondal, & Pachova, (2009). Maphosa, (2008);
Transmission and distribution networks	Kramarenko, (2010).
Geographical locations, global warming & pollution	del Rio and Burguillo, (2007); Drennen <i>et al</i> , (1996); and Weber, (2011). Kramarenko, (2010). Rabl & Zwaana, (2004).
Corporate governance across all structures	Ambali et al., (2011). Azoumah et al., (2010), Pollit, (2007).

## **2.10 Summary of literature review**

From a study of literature the main research question of this study is:

**What are the challenges or factors affecting the National Energy Policy process of energy projects implementation?** The conceptual framework is classified into the dependent, implementing and independent dimensions (variables).

**Figure 2.1: Proposed Conceptual Framework Model**



**2.11 Summary**

This chapter reviewed and explored literature sources to find out what has been researched, discovered, commented and concluded on the subject of energy policy implementation. Energy policy implementation factors were looked at from the perspective of the Western world, Europe, Asia, Africa and finally Zimbabwe. From the analysis, empirical evidence has shown that factors affecting energy policy are finance, energy resources, risk management, transaction costs, government regulations, organizational or company factors, market risks, trends and forces,

investment decisions, energy projects sustainability, profitability and the availability of technological information on the market. Energy projects products or materials had a bearing on finance sources. In Zimbabwe, literature has proved that it is financing sources, planning and budgeting, corporate governance, and human resources and institutional capabilities which are the main factors affecting energy projects implementation.

This study distinguished between national energy policy independent dimensions, implementing dimensions as well as the main thrust of this research (dependent dimension) which is NEP project implementation challenges. As a contribution to literature, this study will focus on those dimensions that were left out of existing literature, if at all. The next chapter will discuss the methodological approach adopted to test these proposed dimensions, and whether this proposed conceptual framework is supported by data collected from respondents.

# CHAPTER THREE

## Research Methodology

### 3.0 Introduction

The previous chapter discussed literature review, exploring the subject of energy policy implementation. The main aim of this research is NEP implementation challenges. This chapter discusses the research design, philosophy, primary research method, data collection process and the unit of analysis. Furthermore, the data analysis process is discussed. Also included in this chapter are research limitations as well as validity and reliability concerns. The Chapter ends by discussing points to note for ethical considerations.

### 3.1 Research Design

Burns and Grove (2007); and Creswell (2008), describe research design as a platform upon which the conduct of a study maximizes control over factors that can interfere with the study's results or outcomes. The design spells how to structure the study and indicates how the main parts of the research project interact. Design means to choose the selection sizes, type of data collected, and how to analyse and interpret the information obtained from respondents in order to answer research questions. According to Corbetta (2009), a research design constitutes the blueprint for the data collection, measurement and analysis. Research designs are broadly classified into two broad groups, (Robson, 2012). Robson further postulates that these are quantitative and qualitative research designs. In addition, Silverman (2012) regards qualitative research design as often used to generate possible ideas that can be used to formulate a realistic and testable proposition.

### 3.2 Philosophy

Saunders, Lewis, and Thornhill (2009), argue that research philosophy depends primarily on the approach one has about the development of knowledge. Three

research processes dominate literature, namely positivism, interpretivism and realism, (Saunders *et al.*, 2009; & Smith, Brown & Miller, 2008). However, the basis for a research approach is derived from the kind of research carried out, (O'Brien, 1993, as quoted by Saunders, *et al.*, 2009). This research adopted a qualitative approach together with the interpretivism philosophy. The philosophy points to the social process and how people interpret and give meaning to the social world, (Robson, 2012). The interpretivism approach is based on understanding and interpreting meanings of the social world. According to Saunders *et al.*, (2009), the interpretivism philosophy relates to the social world of business and management. The philosophy says that this business world has so many complexities such that it cannot be theorized by definite "laws", as in natural sciences.

Interpretivism was selected because it was most favourable for the methods and data collection instruments used in this research. These techniques are case studies using semi-structured interviews which produce information that is rich in insight, content and explanation. In addition, interpretivism philosophy was chosen so as to make use of its inherent flexibility, reasoning and analysis. Laws and natural sciences come short when policy issues are discussed. As discussed above, these laws have limitations in answering "why" questions but are suitable when satisfying "what" and "how" queries, (Polit & Beck, 2009).

Interpretivism is based on the fact that meaning is relative and depends on circumstances as different analysts may interpret the same scenarios differently, (Silverman, 2012). Furthermore, Silverman (2012) argues that the business world is very dynamic and has an element of relativity. For the purposes of finding out and identifying energy policy implementation challenges, what one respondent perceives as the greatest challenge may be different from the one presented by the next informant. It is all perception rather than number crunching (Corbetta, 2009).

The qualitative methodology chosen necessitates the study to use the inductive approach as opposed to the deductive approach, (Lancaster, 2005). Kagan (2008)

further explains that the inductive method is characterized by building up a conceptual framework from the data collected on research dimensions or research questions. The energy problem is pervasive in Zimbabwe and since textbook style solutions have failed, it was imperative that the research adopted people's views, perceptions, feelings, and recommendations and as such the inductive approach became justified. Further, the inductive approach is based on meanings people attach to phenomena, an in-depth grasp of the research context, gathering of qualitative data, and the realization that the individual study is part and parcel of the research cycle (Saunders, *et al.*, 2009). These characteristics fit well the chosen interpretivism philosophy.

### **3.3 Primary research method**

Robson, (as cited in Saunders, *et al.*, 2009), defines a case study as a strategy for carrying out research that includes an empirical investigation of a particular contextualized phenomenon within its real life environment using multiple sources of data. The case study method was deemed appropriate because it provides the opportunity for this study to gain an in-depth understanding of the NEP (Nykiel, 2007), and an insight into how it is implemented by companies involved in energy technologies. Furthermore, the multiple case study method becomes nomothetic as opposed to being idiographic, (Sekaran, 2010). Moreover, the method lays the groundwork for better understanding of dimensions through semi-structured interviews with stakeholders and helps to provide answers for "why", "what" and "how" questions, (Creswell, 2008; Marsh, 2008; Robson, 2012; & Saunders, *et al.*, 2009). The main purpose of this approach is to explore insights into how these companies perceive NEP, its implementation challenges, and to interview information rich experts so as to come up with a conceptual framework on the major research question.

The interview was used as a primary research method to conduct the research. Qualitative methods such as these create openness between the respondent and the interviewer such that the confidence and trust established enables sensitive



information like government regulations, policies and interference in tender awards for energy projects to be discussed.

According to Berg and Latin (2007), the approach has a unique attribute of encompassing many dimensions compared to a quantitative approach. For this research, these dimensions were, for example, corporate governance, company structure, corruption, policymakers, political appointees, infrastructure, market risks, and labour issues, just to mention a few.

This method is necessary because it was considered more natural, and refrained from any form of manipulation, simulation, interference or disturbance, (Corbetta, 2009). The respondents were monitored and observed in their natural surroundings, as explained by Corbetta. From experience, the interviews conducted flowed freely and were semi-structured such that follow-up questions were based on what the respondents said.

Observations were easy to carry out during interviews. In this context, facial expressions and body language buttressed or refuted the answers which were made verbally, (Nykiel, 2007; & Sekaran, 2010). It was very important for this study to find out how the different constituencies understood the concept of energy policy and its challenges, and this therefore necessitated a deliberate decision to adopt a case study method. In terms of more and better interactions with respondents, case studies score higher than surveys, (Marsh, 2008; & Robson, 2012).

Case studies became more relevant because failure to implement the energy policy over the years since 1998 resulted in the energy crisis: load-shedding, blackouts, and failure for energy utilities to meet demand, ("Energy woes haunt ZESA," DailyNews, 2013). These issues directly affect people and affect emotional feelings hence cannot be revealed through mathematical and scientific models. It was considered more appropriate that a practically oriented research method be used to get the reasons for implementation challenges from bodies and individuals. An in-

depth understanding of the problem helps to explain how they feel about the energy crisis.

### **3.4 Data collection process**

The data was collected through semi-structured interviews, using an Interview guide (see Appendix A). Bernard (2010) defines an interview as “...*a conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information and focused by him on content specified by research objectives of systematic description, prediction or explanation,*” (p. 229). The other data collection instruments that were used were tape recordings, and observations.

Initially, a pilot study was done by conducting semi-structured interviews on 1 respondent per case study. Thereafter problems and ambiguities on the interview guide were clarified before the actual interviews. Information gathered was then compared with secondary sources of data e.g. company reports. Semi-structured interviews were considered more relevant when used to generate concepts (inductive) and ideas as well as to uncover perceptions and attitudes, (Nykiel, 2007). All data which cannot be structured as numbers or figures are considered qualitative, although other qualitative data may be manipulated to become quantitative data, (Berg, & Latin, 2007; Bernard, 2010; & Creswell, 2008).

#### **3.4.1 Unit of analysis**

This study is mainly concerned with the major research question: What are the National Energy Policy implementation challenges? The research is about the factors affecting the process of energy projects implementation and why the policy fails to produce the results intended, over the years. The purpose is to identify these challenges and recommend solutions.

### **3.4.2 Unit of data collection**

Purposive selection using non-probabilistic sampling was used to select respondents randomly. Four distinct departments were selected as multiple case studies. The informants were ministry of energy officials, executive and senior management of two parastatals in the energy industry, and an independent power producer. A total of 36 respondents were interviewed out of a targeted number of 48 and of these, 6 were from the ministry, 15 were from one parastatal and 12 were from the other. Independent power producers provided only 3 people as respondents. The level of respondents was at director and senior executive levels. The unit of data collection was 15 informants per each company selected. Out of the targeted population, the researcher managed to interview a few respondents due to the absence of some. Semi-structured and in-depth interviews using interview guides as data collection instruments were used to gather information. Those respondents with an expert knowledge in policy implementation were targeted for interviewing but this was not always the case. However, the approach used to select the target respondents deserves special mention. Knowledgeable experts are very few in each of the companies or departments selected as case studies. In so doing, the research data collected was highly informative (Bernard, 2010). Since the research concerned itself with policy, ordinary employees were not selected in the list of the target respondents because only those involved in policy making and policy implementation were only interviewed, except very few middle managers in the case of REA and ZESA.

### **3.4.3 Data collection strategies**

As defined by Fraenkel and Wallen (2006), a research strategy is a plan of activities that gives direction to research efforts, enabling one to conduct research systematically. The strategy is a blanket term for research design, and other data collection techniques, (Berg & Latin, 2007). Analysis then provides answers to research questions, (Corbetta, 2009; & Sekaran, 2010). According to Creswell (2008), Fraenkel and Wallen (2006), Marsh (2008), and Robson (2012), an analysis can be chosen from surveys, action research, operational research, experimental,

grounded theory, ethnography, modeling and case studies. Case studies seek to understand societal phenomena in a particular context, according to Sekaran, (2010).

Case study method using semi-structured interviews as data collection instruments was also considered appropriate in this research since it opened up for informants and respondents to explain their views in person and avoid confining them to a Yes or No type answers. The methodology also allows for a better holistic view to the major research question, (Marsh 2008). The qualitative approach enabled this research to make inferences and link different views from respondents and using the inductive approach, formulate some common conclusions from these views. In preferring the qualitative design over the quantitative design, an in-depth understanding of the challenges affecting implementation of the policy from the relevant stakeholders was achieved. The types of data gathered were unstructured yet rich in understanding of the main research question, (Saunders *et al.*, 2009). The approach became useful in re-organising and re-orientating the data into meaningful information, (Bernard, 2010).

### **3.5 Data analysis process**

In analysing qualitative data, studies are guided by an emic focus of representing respondents in their natural setting, as opposed to an etic focus on the study's terms, (Fraenkel & Wallen, 2006). Tape recordings of the interviews were analysed to find common themes, answers or ideas to questions that came out of the semi-structured interviews. Using an inductive approach, inferences were made on evidence from the respondents. Similar concepts were framed or coded. Sub-categories which emerged were also grouped under a major theme. Cross relationships, inter-relationships and inter-dependencies were established and these relationships are shown in the appendices.

### **3.6 Limitations**

Qualitative research is more subjective than objective, (Saunders, *et al.*, 2009). Subjectivity in this research was minimised by avoiding personal opinions at all costs, or manipulating the results. This was achieved through making citations wherever possible, and tape recording the conversations. Some believe that the study of a small number of cases can offer no grounds for establishing reliability of findings, (Bernard, 2010; Corbetta, 2009; Sekaran, 2010; & Silverman, 2012). Additionally, bias can be a factor in case studies because of the intense involvement, and chiefly because of non-probabilistic sampling, (Nykiel, 2007). Smith, Brown, and Miller, (2002), argue however, that case studies can be successful if planned carefully and can be useful as an exploratory tool.

However, problems arose during the process of interviewing because the targeted respondents sometimes were not available hence the numbers interviewed varied in each case study. Originally, it was targeted to interview REA/ZESA directorate, senior and executive management since these are responsible for policy; and Ministry of Energy officials, senior management for one of the IPPs, but this did not materialize as expected and the study had to make do with what was available.

Tribalism, languages, physical appearance, and personal character of the researcher did not in any way influence the information gathering process. The researcher was clean shaven, and wore smart casual during interviews. Because observations and interviews were used in this research, the Interviewer used vernacular where appropriate and assumed humility in all cases.

The time to conduct this research was not good enough and because of this, the number of respondents were small e.g. 3 for the independent power producer. Time to interview the respondent was limited as well in some occasions. At times the interview failed to take off because respondents were very busy at the moment of the interview.

### **3.7 Validity and reliability**

Reliability refers to results which are the same or consistent when the same research instrument is administered to different respondents, (Fraenkel and Wallen, 2006). On the other hand, objectivity is qualified as the absence of subjective judgement, according to the same authors. There is a great deal of unreliability for findings as a prediction of the population, (Blaikie, 2007). To overcome this barrier, 15 respondents were targeted per each case study, although this figure was not achieved for all of the case studies. Where the target number could not be achieved, lower management employees according to the hierarchy of the organization concerned were selected to make up for the absence of the higher ranked respondent.

Reliability levels are low because findings are not consistent when the same tests are repeated under similar conditions, (Corbetta, 2009; Marsh, 2008; & Polit & Beck, 2009). However, data validation was ensured by triangulating data sources such as interviews, observations, company reports and archives.

### **3.8 Ethical considerations**

Before conducting the research interviews and exploring company reports and archives, the researcher approached departmental or company heads with letters seeking authority to conduct interviews with staff under their authority, (refer to Appendix E for a copy of the letter). Having obtained permission to conduct interviews and access to some company reports, financial and material resources were mobilized to carry out the tasks. After making initial introductions and appointments with the respondents, the researcher re-introduced himself and detailed the duration of the research, gave assurance that should the respondent wish to withdraw at any time, it was his or her right, without any negative consequences.

The researcher also outlined objectives, purpose and benefits of the research study to the researcher and to the respondent as well. The worthiness and integrity of the

research was thoroughly explained. Further, it was explained that should the research be successful, the community, stakeholders and respondents were going to benefit by having the research findings published in accredited journals in order to reach a wider audience. It was emphasized that the research was being conducted honestly with no intention to deceive or mislead anyone, and that this was for academic purposes only. Polit and Beck (2009) stress the importance of avoiding any form of emotional or physical harm, and where such incidences would occur, the researcher would make immediate provisions for quick counseling.

Where the respondents were doubting confidentiality and privacy of their identities including answers to sensitive questions, for the sake of job security and promotion, a consent form was signed which affirmed that the researcher would at no time breach his promise and would protect the identity of his sources. Only adults above 18 years were asked to volunteer in participating as respondents. Anonymity was maintained in citations by just mentioning “respondent R1, R2, or R3”. Impartiality and political patronage was avoided as far as possible. To this end, participants were informed that the researcher was politically neutral and that the results of the research would never be misused for political leverage.

### **3.9 Summary**

This chapter discussed the research philosophy (interpretivism) that was adopted in this study as well as the research design and approach. The research design borrowed a lot from the research onion, a concept readily found in textbooks but not repeated here, (Saunders *et al.*, 2005). The chapter then outlined the research philosophy but very briefly. The Chapter showed how data was collected, analysed and interpreted, which then forms the major theme of the next chapter.

# CHAPTER FOUR

## Interpretation and Analysis of Data

### 4.0 Introduction

The main research argument of this study concerns national energy policy analysis and implementation challenges and from literature review, these were institutional barriers, market risks, financial resources, and corporate governance issues; as faced by the energy utility companies. Furthermore, the study seeks to find out why investment in the energy sector is not enough to meet energy demands. The preceding chapter discussed the methodology used in approaching this study. This chapter analyses and presents study findings.

### 4.1 Overview of cases and respondents

The table below summarises the number of respondents per case study.

**Table B: Number of respondents per case study**

	Case Study 1	Case Study 2	Case Study 3	Case Study 4
<b>Target Size</b>	15	15	15	15
<b>Selection Size</b>	6	15	12	3

### 4.2 Framing and Analysis of Qualitative Data

Responses from interview questions were analysed and placed into observable themes, concepts or categories as shown in Appendix B, Table 4.1.

#### 4.2.1 Preset categories from Literature Review

These are the categories that were obtained from theory. In analyzing all the data, the major concepts which were discussed, critiqued and noted during literature review were preset. Using an inductive approach, new emerging concepts were crystallized from analyzing research data from respondents.



### **Concept 1: NEP Implementation Challenges – financial & material resources**

All the 6 officials from case study 1 concurred that the main obstacle to national energy policy implementation challenges was funding. 19 respondents from case study 2 and 3 believe that financial resources are the biggest undoing in project implementation. However, all the respondents from the independent power producer cited a different point of view:

*“The National Energy Policy always fails year after because of gross incompetence and mismanagement. The parastatals employ the wrong people to implement the policy. Chief Executives are appointed on political affiliation instead of on merit”* (R2).

Other key findings from the interviews include the fact that the country must attract foreign direct investment, as supported by respondent 7 (R7) from case study 2:

*“The macro-economic and socio-politico-environment must improve in order to attract foreign direct investment. Investors shun this country’s energy projects because there is high risk and the returns are low,”* (R7).

### **Concept 2: NEP implementation challenges – human capital & corporate governance**

All 6 case study 1 respondents, 12 from case study 2 and 10 interviewees from case study 3, as well as all respondents from case study 4 cited corruption in the way capital energy projects tenders are awarded as the major impediment to implementation, as evidenced by one senior employee (Respondent R3) in the independent power producer case study:

*“The recent awarding of smart metering tenders by ZESA to some companies was shrouded in mystery and this resulted in a former minister being arrested. Also, one of the Chief Executives of the parastatal’s subsidiaries was sent on forced leave with*

*full benefits because of investigations into the awarding of tenders for Kariba North Hydro-Power Phase Two Refurbishment'*

According to Geiger (2003) and Mitton (2002), corrupt individuals in the energy industry chain relate to the point of managerial inefficiency from theory. The four pillars of corporate governance are transparency, responsibility, fairness, and accountability, according to Goyal and Park (2003), and when these are lacking in the awarding of tenders for NEP implementation, then, it means that the whole process is shrouded in fraud and corruption.

### **Concept 3: NEP implementation challenges – risk management and market structures**

Of all the 36 respondents interviewed from all the case studies, 29 concurred that Zimbabwe is a very high risk country. Therefore return on investment or profitability and sustainability are very low. As revealed by Zammit (2003), it was cited that political, economic, exchange rate, and credit risks are some of the reasons why some financiers are hesitant to extend lines of credit to Zimbabwe. (Kasambira & Nyamunda, 2011) For the few companies that succeed in getting loans or overdrafts, according to Bwanya (2007), then the interest rates would be very high as compared to the rates charged on borrowings from other countries, as respondent R1 from case study 4 put it:

*“Zimbabwe fails to attract meaningful investments from Western countries save for countries from the Far East because the EU imposed sanctions on Zimbabwe and the country is considered a high risk. ESKOM in South Africa for example gets loans from Afreximbank at 4% interest per annum (p.a.) yet Zimbabwean companies are charged in excess of 11% p.a. Banks which supports infrastructure projects in Zimbabwe include IDBSA, Afreximbank and the Bank of China,” (R1).*

Other risks that were mentioned by 21 interviewees from the case studies as being very high and impacting negatively on NEP implementation were project-related

risks, business related risks, government related risks, client related risks, and market related risks, development risks, technology and project size risks. These risks differed slightly with buyer's risk from theory, (Carcello, Hermanson, & Raghunandan, 2005; Drennen *et al.*, 2006; Reddy, 2011; & Kangari & Riggs, 2011).

#### **Concept 4: NEP Implementation challenges – infrastructure**

All the 36 interviewees agreed that road, rail, and telecommunications infrastructure networks were major barriers to energy policy project implementation. They went on to conclude that infrastructure banks need to lend money to Zimbabwe so that the country can see its energy projects taking off the ground. 27 respondents cited contractual obligations, liquidated damages, arbitration and litigation as some of the problems surrounding project implementations in Zimbabwe. However, this was a departure from theory, where it was suggested that transmission and distribution network infrastructure was the main obstacle,

(IMF Report on Zimbabwe, 2013; Kamp, Mondal, & Pachova, (2009); Kramarenko, 2010; Maphosa, 2008). Said respondent (R10) from case study 3:

*“Government bungling is at the heart of most project investment failures. The Plumtree to Mutare Highway Upgrade took off the ground very well but contractual obligations on the part of the government in a joint venture called Infralink between a government arm, ZINARA and Group Five of South Africa have stalled this multimillion dollar project. The Development bank of Southern Africa has hinted that it will not release these funds in future because of failure by ZINARA to honour part of its contractual obligations. What this means is that there will be cost escalations, liquidated damages, debt default, interest rate risk and other associated vices with bank loans that is, attaching of assets and lack of goodwill.”*

#### **Concept 5: NEP Implementation challenges – Commitment at government, corporate and individual levels.**

27 respondents out of 36 agreed that the government needed the assistance of the corporate sector to move forward with the NEP implementation. Thus, the zeal and

drive to court the corporate sector was lacking. 20 respondents cited recruitment on staff based on nepotism, political patronage, and tribalism as the other challenge to project implementation, as cited by (R12):

*“Even when you are as skilled and knowledgeable as Isaac Newton, chances of landing employment without a bribe, a relative, a friend or without offering any kickbacks are next to nil. Government also need to walk the talk on policy implementations. People must be employed on skills and merit,”* (R12).

10 respondents argued that the custodians of policy must not have their portfolio changed before they realize the potential of their policies. 6 respondents however said that the government must consult widely before crafting policy and there must a debate on state television or by opposing political parties so as to gather all the brilliant ideas from the Zimbabwean population.

#### **Concept 6: NEP Implementation challenges – Sufficiency of energy sector investments**

Lack of finance was cited by all the 36 respondents as the main driver for insufficient investments in the energy industry. Energy project are associated with huge initial outlay and without donor support or partnership with multi-national corporations, government alone will not achieve much, (Kramarenko, 2010, Musango, 2011, & Owen, 2006). Financial institutions were cited by 29 respondents as the major stakeholders in financing energy projects. The government may issue bonds and treasury bills to raise funds for energy investments, (Mwansa, 2006).

#### **4.2.2 Emerging themes and concepts from categories.**

With reference to Appendix D, Table 4.3, there were new concepts and themes that were obtained from respondents. The concepts which emerged from recorded interviews were national risk, regulator changes and new policy frameworks, equity/debt shortfalls and the social, political, and macro-economic environment. In

the table the first column depicts the concepts which were analyzed and found to aggregate the feelings, comments, opinions and views from the case studies in each row. It can be noted that only concepts relevant to the research were summarized. These ideas assisted very much in building up, refining, augmenting and revising the conceptual framework, which was derived from literature review (inductive approach).

#### **4.2.3 Analysis of main emerging concept: government policies & macro-economic environment.**

Four respondents in Case Study 1 had a similar view on this concept. They agreed that inter-country trade needed to be enhanced so as to improve on technology sharing, research and development. The other two respondents in Case Study 1 cited problems of Environmental Impact Assessments and ZERA licensing issues as a contributory factor in energy initiation and implementation issues. One of the two added: *“Tribesmen from villages earmarked as ideal siting locations for large thermal power stations or substations usually resist evacuation, as happened to the Zambezi Valley Tonga tribes in the 1960’s when Kariba Dam Wall was built,”* (R2).

Case study 2 had 12 participants who said that government regulations, policies and empowerment issues had a negative effect on Zimbabwe as an investment destination. The other respondents in case study 2 did not provide any meaningful contribution on this theme. For case study 3, 10 respondents mentioned uncertainty in regulatory changes, abrupt or planned, and government constraints as inhibiting factors in the implementation of NEP. The remaining 2 interviewees had varied views on macro-economic factors: from natural disasters, change of government, high taxation, high royalties and levies as scaring away investors. Case study 4 respondents also varied in their opinions on the theme.

Respondent R2 said recent tariff changes, price disparities between domestic metering versus industrial, load-shedding issues, scrapping of electricity bills arrears, and efforts to align the tariff regime with the rest of Southern Africa and the

consequent resistance from industry all combined to spell doom for the energy projects implementation. Quoting R3 from the same case study:

*“At the moment our government is so broke that they are even failing to announce the traditional 2014 budget on time. The liquidity crunch facing the country is so severe that long queues are beginning to re-appear in banks and shops reminiscent of the hyper-inflationary era of 2006-2008, which then, was made worse by recession. If the government cannot produce the national budget on time, what this means is that there is no money to implement the national energy policy.”*

Other divergent views mentioned were that since independence in 1980, Zimbabwe has had the Transitional National Development Plan 1983-85, the First Five Year National Development Plan 1986-1990, the Second Five Year National Development Plan 1991-1995 (ESAP), the Zimbabwe Programme for Economic and Social Transformation 1996-2000. After 2008, several 100 year plans were made: Short Term Recovery Plan 1 and 2, and Medium Term Plan up to 2015 which now has been superseded by ZIMASSET. However all of these plans have yielded nothing and this fact smack of low or no commitment on the policy makers for such programs like NEP.

#### **4.2.4 Important categories and their sub-categories**

From the transcripts and interviews done for the four case studies, important concepts and categories were mentioned several times more than the others and these are infrastructure; social, political, economic and regulatory environments; human capital base, skills and expertise; and financial resources. Under these broad categories, there emerged other sub-themes which had direct links with the main themes, as shown in the table below.

**Table C: Important Themes, Categories and Sub-categories**

MAIN CATEGORY	SUB-CATEGORIES
<b>Infrastructure</b>	Road, rail, telecommunications, bank loans, Energy technologies, Obsolete equipment, contractual obligations, liquidated damages, arbitration and litigation
<b>Macro-economic environment, Government Policies</b>	Inter-country trade barriers, indigenization & empowerment laws, Government policy, public private partnerships, Regulatory Changes, EMA Certification, ZERA Licencing, Displacement Compensation
	Force majeure, taxes, Royalties, Levies
<b>Market Risk Structures, Profitability and Sustainability</b>	Commercial Risk Insurance, Interest Rate Risk, Political, economic exchange rate risks
	Low sustainability, low rate of return on investment (profitability).
	High interest rates on loans and overdrafts.
	Project-related risks, business related risks, government related risks, client related risks, and market related risks, development risks, and technology and project size risks.
<b>Financial, Material &amp; Human Resources Availability</b>	Corruption, Corporate governance issues, Bureaucracy, Recruitment & Appointment of skilled manpower
	High Cost of Money, Contractual issues, Misallocation of resources
<b>Commitment at government, corporate and individual level</b>	Wide stakeholder consultation, Debate on state media, recruit according to merit, avoid nepotism, corruption, bribes on recruitment
	Government to “walk the talk”, Custodians of policy to be given longer terms to implement the policy, Tribalism, political patronage used in recruitment.
<b>Sufficiency of Energy Investments</b>	Public private partnerships, donor & MNCs support as sources of funding.
	Treasury bills, government bonds
	Government to introduce a levy or tax on salaries towards projects
<b>Company Structure and Strategy</b>	Better service conditions, structure to support strategy
	Vision & mission of the company to be in line with national policy initiatives

#### **4.2.5 Patterns emerging between and within categories**

In analysing the concepts, some patterns and relationships between themes emerged. The unavailability of financial resources curtails infrastructure development and without funding there is low remuneration for skilled. Absence of efficient infrastructure results in high service costs, project delays, corruption and artificial bottlenecks in service delivery for projects.

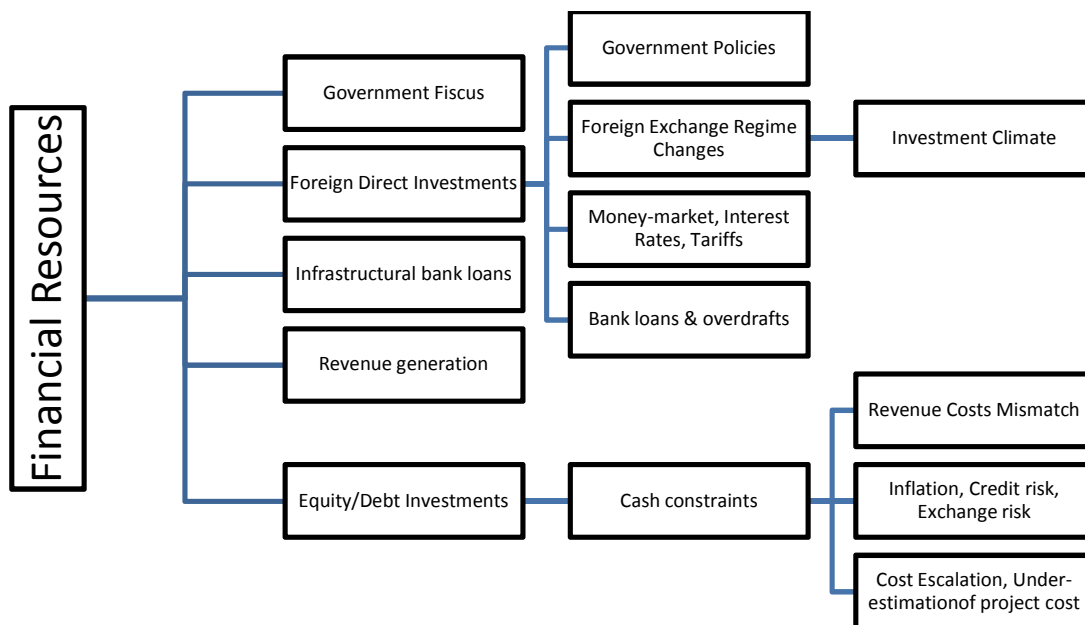
Finance is from foreign direct investments, bank-loans, money market investments, taxes, royalties or from government fiscal allocation, (Gregg, 2009). Allocation of government fiscus to energy projects is born out of government policy and

regulations. Alternative energy technology is another solution to power shortages in Zimbabwe. However, in all these technologies, the private sector has an important role to play, (Whingirwi, as cited in Newsday, 2013). In other words, it is the implementation aspect of these projects that presents a major challenge. In brief, this is how the themes are inter-related. Consequently this inter-relationship gives rise to a new conceptual framework or model, which will be discussed in Chapter 5.

#### 4.2.6 Relationships between categories

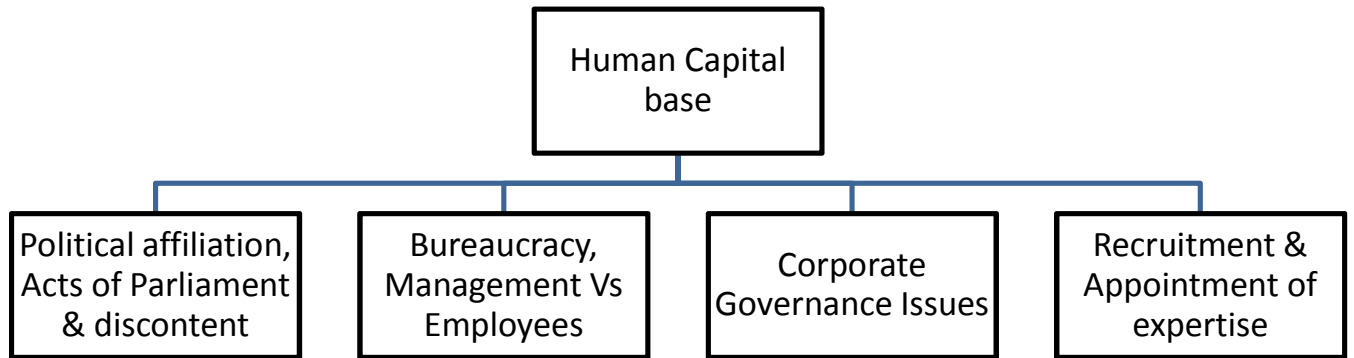
The diagram below shows how the concepts, themes and propositions are inter-connected in a causal relationship. These were analysed to be the independent dimensions (variables). The important independent propositions are discussed in a causal relationship with their implementing sub-propositions.

**Figure 4.1 : Implementing Proposition 1 – Financial Resources**

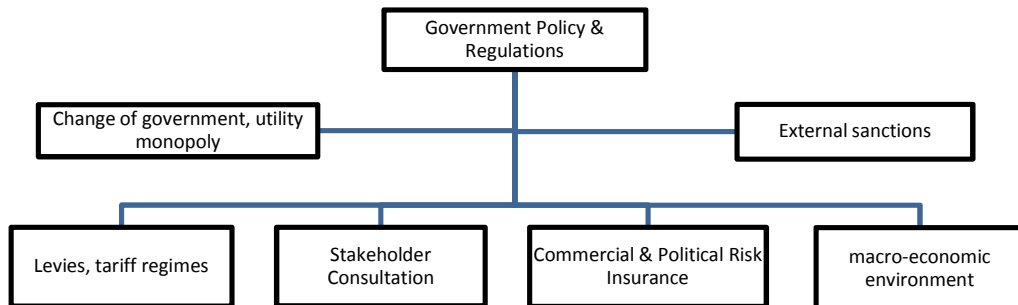




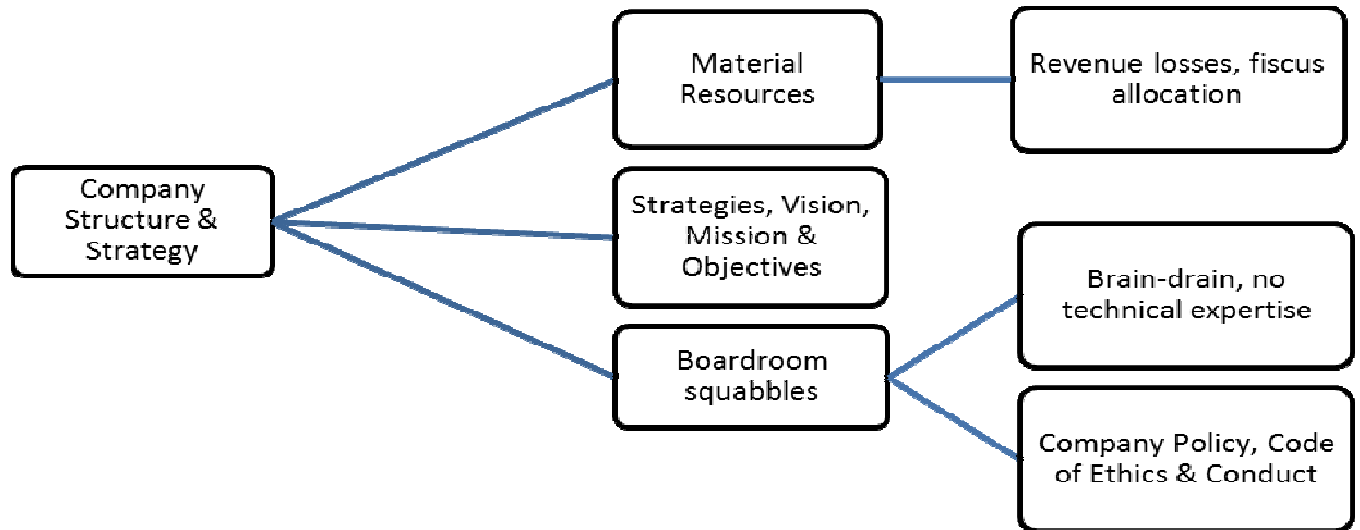
**Figure 4.2: Implementing Proposition 2 – Human Capital Base**



**Figure 4.3: Implementing Proposition 3 – Government Policy And Regulations**



**Figure 4.4: Implementing Proposition 4 – Company Structure And Strategy**



### **4.3 Interpretation**

The research will interpret the data gathered in sections that follow.

#### **4.3.1 Discussion of key findings**

The key findings from this research are financial resources, risk management, company structure and strategy, government policies, human capital, and corporate governance issues. Infrastructural development in terms of road, rail and telecommunications systems ranked least in terms of being a barrier to project implementation. New findings include social, political, economic and macro-environmental issues. These key findings have largely supported the original conceptual framework.

##### **4.3.1.1 Financial Resources**

The concept of financial resources as the main stumbling block to projects implementation is based on a number of contributory factors, (Kaplan, 2004). The analysis on financial resources had other sub-categories that emerged as shown in Figure 4.2; and these minor concepts having a causal relationship to finance include cost escalation or under-estimation which has a direct link to inflation and credit risk.

Investors fear the high probability of credit risk and cost escalation as likely to erode their future return on investment and future loss of revenue. Zimbabwe is also considered a high risk country.

The majority of respondents agreed that the other main problem in Zimbabwe is government commitment. Every year, there is no substantial fiscus allocation to the energy sector in the national budget as proof of commitment by policymakers to NEP. Instead of empowering ZESA to collect electricity bill arrears from consumers in 2013, instead the government decided to scrap away all outstanding bills against the utility's projected revenue flows and income, thereby destabilizing the essence of capitalization of energy projects and this can be interpreted by external investors as a market which cannot be attractive for energy project investments. This action by policymakers is tantamount to destroying the capacity for ZESA revenue generation.

On equity and debt investments, which are directly linked to infrastructural bank loans, the study interpreted this theme to mean that ZESA and REA are monopolies supported wholly by the government. Hence, they are not allowed to raise capital from the stock market to implement energy project. Other brokers do this on their behalf through Treasury bills floated by infrastructural banks, which, however, do not find any serious takers or investors because there is a serious liquidity crunch in the Zimbabwean economy and because of recession, the collapse of the Reserve Bank of Zimbabwe (RBZ), and other political factors, the likelihood of getting a return or encashing the Treasury Bills at maturity is next to nothing. The RBZ has since lost its "lender of last resort" status and there is high risk of loan default by the government.

ZESA tariffs were mentioned as the lowest in the SADC region and this is the reason why there is insufficient investment in the energy sector in Zimbabwe. Lately, the Chinese and the French poured billions of dollars into hydro-electric power projects in Zambia and thermal/nuclear power stations in South Africa, buttressing the results of this research

#### **4.3.1.2 Company structure and strategy**

The study interviewees pointed out that the structure of most energy sector companies does not support the strategy. The structures of ZESA and REA are clearly outlined in the vision and mission arguments with clear emphasis on renewable energy technologies, research and development, biofuels and extended electrification program (EEUID). However, true to respondents' views, the structure of one of the parastatals does not support the strategy. The interpretation here is that the vision and mission of the organizations need to be supported fully by qualified staff in the right vacant positions. These organisations are top-heavy with a lot of senior management who have hefty packages such that the best international practice ratio of revenue to salary bill is rarely achieved. A number of state utilities are failing to pay workers. However, this observation cannot be generalized because the pattern differs with organisations.

Other factors contributing to the energy policy implementation challenges are dilapidated grid infrastructure, failure to procure state of the art computer based billing and revenue collection system by ZESA, under-utilization and abuse of installed power infrastructure by customers resulting in low volumes of revenue. Commercialisation of state enterprises would accord access to the latest, top of the range state-of-the-art, technological resources, and to the managerial skills which are grossly and grievously lacking in most of the public sector enterprises. This endeavor would arrest the rot and much of the chronic managerial deficiencies, inadequacies and incompetence's which bedevil many parastatals.

According to E. Bloch (personal communication, The Zimbabwe Independent, 2013), government needs to work hard on infrastructural development to accord sufficiency of fiscal inflows. These are essential for economic revitalisation, which can only be achieved by partial or total privatisation of key parastatals, including ZESA and REA, and only then can implementation challenges of the energy policy be overcome. This fact is supported by Musango (2011). Musango (2011) stresses that in 1992, the

IMF and World Bank crafted the Economic Structural Adjustment Programme (ESAP), and pursuant thereto, legislation was enacted to enable the privatization of parastatals, via Public-Private Sector Partnerships, (PPPs).

#### **4.3.1.3 Government policy and regulations**

Government policies, according to Turnbull (2002), affect every other factor as barriers, hindrances, impediments or stumbling blocks to energy projects implementation. It is unavoidable to discuss government policies, sensitive as they are. Government policies are also not consistent. NEP keeps changing and this frustrates investments. Figure 4.4 and Figure 4.2 are inter-related and discussion of one cannot preclude the other. The following discussion reveals this:

- (a)** On recruitment and appointment of expert skills, a better remuneration and good working conditions reduce staff turn-over and brain drain (Kramarenko, 2010).
- (b)** Normally the legislature determines laws, regulations and policy. Parastatals such as ZESA, REA and ZERA derive their strategies, vision and mission statements from the ruling party manifesto e.g. ZIM-ASSET. The parliament also determines Treasury allocations to empower policies such as NEP. Revenue inflows then follow as soon as policies are successfully implemented, (*“Revitalising ZESA to meet energy demand,”* 2013).
- (c)** The Board of any company is responsible for strategy, vision and leading the company in the right direction in order to achieve set objectives, (Jensen & Meckling, 1976). If boardroom instability occurs, squabbles disrupt the smooth running of the organisation. Tenders, and material procurement procedures then take unnecessarily long to the detriment of the organisation, (Hermalin & Michael, 2003). The inefficiency of a board is directly related to the organisation’s corporate governance, (Hillman, Keim, & Luce, 2007).
- (d)** The code of ethics and conduct is actually one of the prescriptions from corporate governance principles. Therefore an organisation without sound business ethics will face challenges in project implementation, (Donaldson & Davies, 2000).

It was also observed that government regulations affect social political and economic macro-economic environments, which are all sub-themes or concepts discussed fully in the preceding sections.

Respondents mentioned alternative funding, private player participation in NEP formulation and wide stakeholder consultations as some of the challenges affecting NEP. Furthermore, the government also needs to liberalise the energy sector by encouraging public private partnerships for parastatals, (Tsumba, 2000; & Wright, Filatotchev, Hoskisson, & Peng, 2005). A levy may be introduced as a deduction from all gainfully employed adults, or the government may have to introduce royalty tax on mining companies towards electrification projects, (Baird, 2006; & Bakker, 2002).

#### **4.3.1.4 Human capital and corporate governance**

In any organization, the most important asset is the employee, (Iecovich, 2005; Long, 2004; & Lipman & Lipman, 2006). Without skilled manpower, the NEP is incapacitated. According to Kramarenko (2012), there was skills flight during the hyper-inflationary era from 2006 to 2008, and most energy sector companies struggled to implement projects with the current human resource. Of those left behind in Zimbabwe, they are obsessed with job security, political maneuvering and boardroom squabbles at the expense of effectively and efficiently achieving company set objectives, (Littrell & Ramburuth, 2007). Where it is necessary to send cadets, graduates or youthful employees for training overseas, because of greed, senior employees are the ones who participate, (Kramarenko, 2010; Mwansa, 2006; & Tsumba 2000).

Results of the study also supported the proposition that the tender procedures for procurement of national energy projects materials are riddled with loopholes that are

taken advantage of by corrupt staff across the board from director level to the messenger (Bwanya, 2007; Okeahalam & Akinboade, 2003; & Otobo, 2000).

Board compositions and tenure in the parastatals do not comply with best practice standards, (Cheng & Courtenay, 2006; Manoka, 2004; Mwansa, 2006; & Naidoo, 2010). Mwansa further points out that non-executive board members are politically appointed and the composition of the Board of directors is unbalanced, save for one parastatal. For every board meeting that takes place, non-executive board members prioritise their welfare at the company's expense and spend time during these meetings "witch-hunting" instead of discussing, reviewing, amending, or crafting policy, (Kramarenko, 2012). Consequently national energy projects do not get the technical analysis and attention that they deserve, (Manoka, 2004). To quote one respondent: "*Government officials are now involved in corruptionship instead of entrepreneurship,*" (R5). Millions of dollars are siphoned out of energy projects instead of into them, ("*Corporate governance and the financial crisis,*" 2010).

#### **4.3.1.5 Risk Management**

The study findings proved that Zimbabwe is a high risk country in terms of investment in energy. Except for the Chinese companies, the majorities of multi-national corporations either pull out of Zimbabwe or trek down south for their energy projects, (Alfstad *et al.*, 2006; Bwanya, 2007; & Kramarenko, 2010). Bwanya further adds that Zimbabwe has no guarantee for investment or high return on investment in energy projects because of tariff control by the government. Moreover, Bwanya further argues that government policies, tariffs, excise duty, empowerment and indigenization policies can change at any time to pose these risks. For the energy projects currently running, progress is unbearably slow and because of their nature, most large capital projects have at least 3 to 4 years from project initiation to completion, (Bhattacharyya, 2012; & Chaurey *et al.*, 2004). It would therefore take up to 10 years before any meaningful large capital project is realized, save for small biofuels or biogas projects which, in the short-term, do not significantly reduce the country's energy deficit, according to Bhattacharyya.

Few banks, financial institutions, or corporates are willing to buy government bonds, or treasury bills according to Boehmer (2000), and this has been made worse by the non-functioning of the RBZ as a lender of last resort and the dysfunctional money market, . Several respondents echoed these sentiments and further that there is nowhere for the state to raise money for capital projects. The country's utility energy company ZESA Holdings, was cut off from its import agreement with Mozambican authorities due to mounting debt running into millions of dollars, (*"Mozambique's power utility cuts off ZESA,"* 2012).

#### **4.3.1.6 Infrastructure**

Respondents cited infrastructure as one of the key impediments to project implementation. The poor state of the roads and rail network negatively impact on project implementation because project materials take longer than necessary to reach the intended destination, (Bwanya, 2007; Mwansa, 2006; & Kramarenko, 2010). Transport logistics pose numerous headaches for the stakeholders, (Bhattacharyya, 2012). However, according to Okeahalam and Akinboade (2003), the impact of infrastructure as a barrier to NEP is minimal because in Africa, Zimbabwe is only second to South Africa in the SADC region. Challenges affecting implementation of energy policies with regards to infrastructure were captured in the World Bank report (2013) on Zimbabwe:

- (a) Deterioration of infrastructure becomes a barrier to the effective provision of vital services and utilities, thus hampering the successful implementation of national efforts, policies and programs.
- (b) The REA mandate is to facilitate or expand the national grid network to rural areas. Focus and priority by the policy-makers should be on power generation and not grid extension
- (c) Poor rail network operating at 15% capacity, and aged, run-down, derelict or broken down railways rolling stock.



(d) Poor turnaround time in the transportation of goods, and increase in logistics costs. Most equipment for power energy projects are heavy duty and require a good road infrastructure to ensure their arrival in a serviceable working condition so infrastructure is an implementation challenge.

(e) Poor telecommunication and internet services in Zimbabwe. The World Bank Report further states that:

*“Though the bulk of financing rehabilitation Zimbabwe’s infrastructure would come from the private sector through Private Public Partnerships, there is a clear need for capacity building at all stages of investment development and regulation and for specific support in power, water and telecoms sectors.”* (p. 87).

Addressing these challenges is the prerogative of Government. Foreign investors use these reasons as justification to shun Zimbabwe.

#### **4.4 Summary**

This chapter looked at research findings, analysis, discussion and interpretation of results concerning national energy implementation challenges in Zimbabwe. Categories which were derived from literature review as well as new emergent concepts were also noted and discussed. Furthermore, the study sought to draw conclusions from relationships between categories, across categories and within categories from content analysis. From the analysis of the findings, the research sought to analyse the implementation challenges, causes, effects, reasons and find the best way forward. The evidence obtained from the interviewees was analysed using both theoretical concepts as well as key questions from the interview. In evaluating and as a way of validating the data obtained from respondents, case study company documents, newspaper articles, reports, and news articles were all referred to although analysis of these archives was not done or used as a data collection technique.

## CHAPTER FIVE

### Recommendations and Conclusions

#### 5.0 Introduction

The preceding chapter discussed key findings, emergent theories, categories of data, summarizing of audio-tapes, recorded notes from interviews, observations and relationships between categories and themes. Comparisons of emergent concepts were made with those found from literature. The main theme or major question is:

**What are the major national energy policy implementation challenges?**

This chapter draws conclusions based on the key findings obtained in Chapter 4 and recommendations will be made based on these. Major questions and set objectives of this research will be addressed as well.

#### 5.1 Summary of main conclusions

Main conclusions will be drawn with relevance to literature and major findings.

**(a) To identify national energy policy projects implementation challenges faced by energy sector companies.**

The study can conclude that finance is at the heart of NEP challenges. Funding is the main engine driving national energy policy. Other challenges include institutional barriers (or government policy and regulations as pre-supposed), diverse risks affecting the country, the external and internal markets, international trade (sanctions), company structure and strategy, human resources base and corporate governance (corruption), and to a smaller extent infrastructure (technology). New findings also brought to the fore the problems in the social, and macro-economic environment as some of the challenges affecting project implementation.

**(b) To analyse the national energy policy framework in terms of market risks, trends, return on investment, and profitability.**

The study can conclude that the national energy policy framework has no clear cut path to follow; nor indicators for the market; nor directions; nor targets and is not sustainable. Changing custodianship of NEP over the years before the previous policy has achieved its target means that policies have less than 100% chance to succeed. Policy makers are more worried about political survival than policy implementation.

Furthermore, there are more risks in the market than found in literature and these include exchange rate risk, political risk and project-related risks, business related risks, government related risks, client related risks, market related risks, development risks, technology, and project size risks. These risks were derived from the study and not from theory.

**(c) To identify and explain reasons for insufficient investment in the energy sector in Zimbabwe.**

Reasons for insufficient investment varied widely but political risk was the main cause. Perception by investors that Zimbabwe is one of the worst investment destination and the cost of doing business in Zimbabwe is very high, (IMF Report, 2013). Corruption was cited as one major social ill that has pervaded all strata of society in Zimbabwe, (Mwansa, 2006; Musango, J. K. 2011). Research also revealed that there is a lot of bureaucracy in getting licenses from ZERA or EMA and the market is not liberalized to an extent that there are very few independent power producers in the country. The NEP and ZERA have been cited as having a bias towards renewable energy and the policy frameworks concentrate on such sources like biofuels, biogas and solar equipment procurement.

**(e) Human capital, corporate governance and government involvement in the functions of these utilities.**

Shortage of skilled power contributes to substandard work on projects. With regards to corporate governance issues, Boards of directors for energy utilities lack good corporate governance practices. The absence of good code of ethics and conduct is a major factor affecting business ethics. The utilities struggle to implement projects because of lack of managerial skills as well as skilled manpower. The state interferes with material procurement through empowerment policies.

**(f) Market risk factors, trends, profitability and sustainability**

The study can make inferences on social, political and macro-economic factors: from natural disasters, change of government, high taxation, high royalties on multinational corporations, and levies as scaring away investors. Other factors exacerbating the energy market crisis include low energy tariffs, price disparities between domestic metering versus industrial, load-shedding issues, scrapping of electricity bill arrears, and efforts to align the tariff regime with the rest of Southern Africa and the consequent resistance from industry all combined to spell doom for the energy projects implementation.

**(g) Is there a long-term commitment at government, corporate, and individual levels?**

The research study can conclude that since 1980 there have been several developmental goals, millennium goals, short-to-medium term plans at government and corporate level. However, in all of these plans, it has been proven and can be concluded that they are just empty rhetoric, political gimmicks and electioneering campaigns with no results whatsoever. Individuals in government fail to commit themselves because there are cabinet reshuffles, re-posting and instead individuals fight for political survival most of the time.

**(h) Is the market conducive for investment in the energy sector?**

Change of policy, transfer of assets, threats of nationalization through indigenization and empowerment policies, the return of the inflationary Zimdollar currency and its

associated uncertainty all create a complex market very much unconducive for investment. Furthermore, the money market in Zimbabwe is characterised by floating rates, parallel rates, interest rates disparities, the liquidity crunch, financial costs, high cost of money, as well as affirmative action and empowerment policies.

As a lender of last resort, the RBZ has failed dismally and instead, the central bank faces lawsuits from corporate bankers whose capital was misappropriated at the height of the hyper-inflation in 2006 to 2008. From 2009 up until 2013, the financial markets in Zimbabwe have been characterised by a massive rebound, with deposits growing substantially, (IMF Report on Zimbabwe, 2013). Be that as it may, the sector still faces vulnerabilities threatening the viability and stability of the sector, especially among the smaller indigenous banks. The IMF Report stated that debt stood at 88 percent of GDP at the end of 2012, and this is grossly stifling sustainable economic growth, and actually limiting the state's ability to access new sources of funding which are critical to the achievement of economic growth, poverty alleviation, and the creation of employment.

## **5.2 Discussion of the main argument**

Chapter 1 proposed that the main challenges to implementation of NEP are institutional barriers, market factors and project risks. Although this is true, however, the key finding in this research as a major barrier, stumbling block or challenge to NEP project implementation has been finance or sources of funding. This reason precedes all the rest, as the study has proved. Institutional barriers, project risks, human resources, company structure, government policies, macro-economic factors, market factors, infrastructure, corporate governance, and corruption all come second to financial resources.

The financial services sector faces a heap-load of challenges. The fiscal space is severely constrained due to poor performance of revenue inflows against a background of rising recurrent expenditure and a shrinking tax base. The economy has a high debt overhang caused by the country's failure to access international

capital and investment inflows worsened by restrictive sanctions. Revenue inflows are coming down, as are export receipts to boost project funding. Balance of payment support from off-shore funders stopped many years ago when Zimbabwe defaulted on its loan repayments and credit lines from even neighbouring countries like South Africa and Botswana have ceased to materialize.

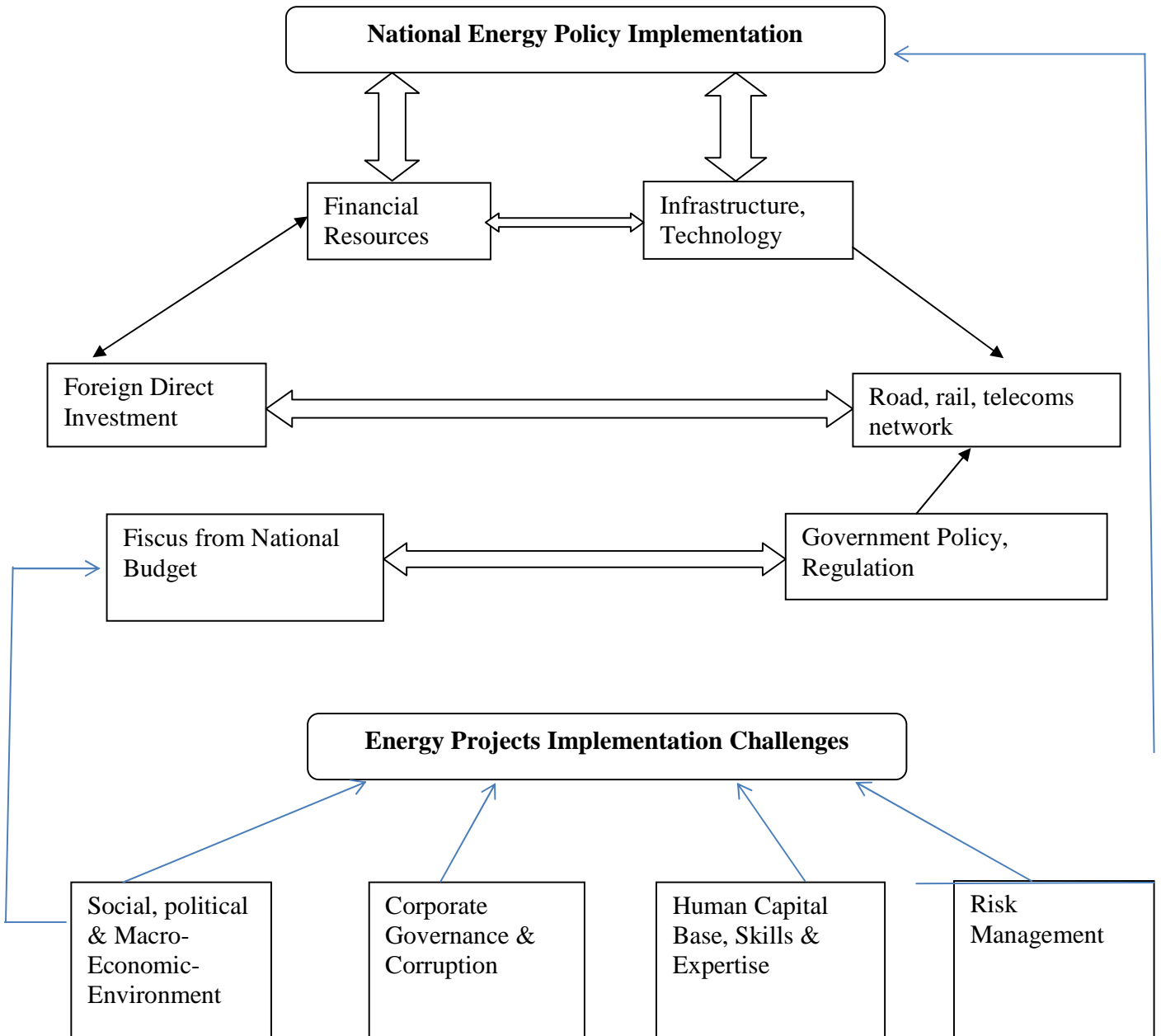
### **5.3 Theoretical Contribution**

Literature dwelled much on such concepts as institutional barriers, market structure, technological, sustainability and environmental assessment, regulatory frameworks, and competition as being the main causes of NEP projects implementation challenges. Theory also suggested barriers to energy efficiency as: the poor, the ignorant, the helpless, the uncertain, the indifferent, the inheritors of inefficiency, and the supply-obsessed financiers, the manufacturers who are inefficiency-blind and financial institutions who are afraid of risky innovations, (Reiner, 2004; Kangari & Riggs, 2011; Chang & Li, 2012; Driffill & Owens, 2006; Chapman & Cooper, 2009; Martinot *et al.*, 2007; & Ambali *et al.*, 2011). Furthermore, *“even if the project events themselves cannot be changed, having a better understanding of the potential impact of those events on the project helps support more informed decision making”*, (Smith and Merritt, 2002, p. 88).

Project management risks are the main factors affecting NEP, according to Rabl and Zwaana, (2004); Berry and Jaccard, (2011). This study concluded that country or political risk was the biggest challenge the country's large capital projects. Furthermore, literature sources (Helm, 2005; Bruce, 2003; Smith & Merritt, 2002; Matsuo, *et al.*, 2012), focused on enterprise-wide risk management issues, yet the study showed that institutional, nationalization or corporate risk needed to be totally eradicated for energy projects to be implemented, (Madubansi & Shackleton, 2013; & Musango, 2011). This is validated by Bazilian *et al.*, (2012).

A lot of literature discusses energy projects and their barriers solely focused on renewable energy (Owen, 2006; Marktanner & Salmann, 2010; Martinot, Dienst, Weiliang, & Qimin, 2007; & Helm, 2005). Respondents' contributions differed and revealed policy issues at government, corporate, directorate, executive, senior management and the individual level. At national level, commitment on the part of policymakers has been glaringly lacking, more so with the constant changing of legislators, permanent secretaries, ministers and other officials who get posted elsewhere in endless recycling and purging. At corporate level, the research did not sufficiently support the original proposition that board composition and tenure needs to be revamped, neither the assertion that the Electricity Act and Rural Electrification Acts need to be amended. However corruption and state interference in the way tenders are handled at the State Procurement Board were facts which were cited by a majority of respondents.

**Figure 5.1: Final NEP Conceptual Framework/Model**





#### **5.4 Methodological contribution**

The majority of previous studies on energy were quantitative in nature, using deductive reasoning and statistical analysis based on SPSS. The methodology used in this research was purely qualitative using an inductive approach.

#### **5.5 Policy recommendations**

Based on the research study, the following national energy policy recommendations are being made:

##### **(a) NEP Consultative Forums**

The NEP should be an all stakeholder consultative piece of document, to include not only the technocrats' or experts' contribution but even the ordinary man on the street. Policies must not be fly-by-night political gimmicks. Policies have to stay their course before newer ones are introduced.

##### **(b) Funding Resources**

Policies should be action-oriented and authorities must get out of the offices and go into the field. Private public partnerships should be fostered to develop rail, road, telecommunications infrastructure and ultimately energy capital projects. Special purpose vehicles should be formed with banking of revenue off-shore and these funds should be ring-fenced to avoid "*politicians dipping their fingers into the cookie jar*", (R7).

##### **(c) Social Environment**

Politicians should cut down on indigenisation rhetoric as this unsettles investors in energy projects who then adopt a wait and see attitude which may trigger another economic meltdown that can lead to social instability, and more power shortages.

#### **(d) Policies and regulations**

- (i) Government may have to cut down on public spending, reduce taxation on disposable income and instead, must leverage on the country's natural resources like gold, platinum and diamonds to raise money for energy projects.
- (ii) The RBZ must be recapitalized to regain its lender of last resort status. In so doing, the money market may be given a new lease of life and treasury bills, government bonds, and borrowings may be another alternative source of funding for capital projects.
- (iii) The government must open up the energy market and even the playing field by raising energy tariffs so as to encourage energy investors into the market and introduce competition to state parastatals and utilities. Creation of competitive markets may be through through deregulation of exchange controls and relaxation of customs duty on import of implementation equipment.
- (iv) The Electricity Act and Rural Electrification Fund Acts must be amended to restructure board independence, terms of office and appointment and corporate governance.
- (v) Energy resources need to be researched vigorously to take advantage of new trends, technology by investing massively in Research and Design efforts.

#### **5.6 Managerial Recommendations**

The following managerial recommendations are being made as a result of key findings from the study:

*(a) Board composition*

The Board of Directors in energy utility companies must be balanced to reflect different trades in health, human resources, engineering, etc. Maximum tenure of office for board members must be 3 years and old horses must not be recycled. Maximum tenure ideally should be two terms. CEOs must have terms of office for only 3 years, subject to renewal.

***(b) Human Resources Skills***

The human resource system at REA comes short on reward systems. For the Rural Electrification Agency to catapult itself well into the future and take advantage of available skills in its employees, they need to encourage creativity and innovation through rewards.

**5.7 Study Limitations**

Because of time limitations, this research could have collected data from more case studies. In the 4 cases that were selected, problems arose in getting down to interview all targeted respondents. Some respondents could not be found on appointed time, and sometimes a few were called on business in the middle of an interview, and others became politically emotional when government policy questions were raised by the Interviewer.

- (a) Some journals could not be accessed because of university logistical arrangements.
- (b) The time to carry out this study was too short such that more respondents could have been interviewed and a better analysis done for the research.
- (c) Finance was limited to recruit experienced Interviewers
- (d) The scope of geographical research was limited. Only respondents from Harare were interviewed.
- (e) Time permitting, triangulation methods could have been used to carry out data gathering.

## **5.8 Areas for further research**

This study looked more into those factors, challenges, problems and barriers to national energy policy implementation focusing on projects. Parts of this study that did not get sufficient time for research include the reasons why the little investment into energy projects does not meet expectations; and to assess how government and political influence affect company structure and strategy implementation in public organisations. It will be ideal also, to find out why ZESA and REA always make the wrong recruitments across the Board and why sometimes staff act in vacant positions for more than two years without being made substantive.

The issue of billing, revenue collection, the pros and cons of new technology like smart metres all need further research. Finally, how can corruption be totally eliminated from society? Who will guard the guard?

## **Appendix A: INTERVIEW GUIDE**

1. The government of Zimbabwe through the Ministry of Energy and Power Development gazetted the National Energy Policy (NEP), in 2012. This research study is about the challenges faced by energy sector companies (ZESA, REA, and Independent Power Producers) in implementing the NEP. What do you think are some of these challenges?
2. Of the energy policy challenges outlined above, how can they be addressed fully?
3. In your opinion, what are the market risks for energy investment in Zimbabwe and does this market provide an attractive return on investment? Why do you say so?
4. The government through the Ministry of Energy is the architect of NEP. Was the private sector involved in crafting the NEP? Should the investment be government driven or private sector driven? What is the level of commitment by the government in the NEP? Can you provide any evidence of this commitment to sustainability?
5. How do you view the NEP in terms of its capacity to improve energy resources? Is there sufficient investment in energy projects? Why?
6. Of the investment cited above, to what extent has the investment been used in terms of implementation? Has this met the expectations of stakeholders?
7. There are pieces of legislation in place for the energy sector e.g. Electricity Act and Rural Electrification Fund Act; do any of these require amendment, or should new legislation be enacted to effect what you feel?
8. Of all the energy resources in Zimbabwe, that is, coal, solar, biofuels, hydro-power, gas, etc, which energy resources deserve more priority in terms of research and development? Has this been catered for in the NEP? Why?
9. What policy framework has been put in place to facilitate successful implementation of the NEP? Is foreign direct investment suitable for energy industry in Zimbabwe? Why?
10. The four pillars of good corporate governance and ethics, as well as transformational leadership are essential from the Board of Directors to the shop-floor in the implementation of energy projects in terms of the NEP, do you agree? Why?
11. To what extent is the government involvement in energy projects implementation? Is it positive or negative interference? How?
12. Do you have any recommendation concerning energy policy and energy problems in Zimbabwe?

## Appendix B : Categories of Data

**Table 6.1a General Categories**

<b>QUESTION</b>	<b>CATEGORIES</b> <i>Responses to Questions were sorted into:</i>
1. The government of Zimbabwe through the Ministry of Energy and Power Development gazetted the National Energy Policy (NEP), in 2012. This research study is about the challenges faced by energy sector companies in implementing the NEP. What do you think are some of these challenges?	Finance ( <b>FIN</b> ), Indigenization Policy ( <b>INDG</b> ), Country Risk (CNTRY RSK), Poor infrastructure (INFR), Contractual obligations, border tariff barriers (TRF), high employment costs ( <b>EMPL</b> ), Governance and ethics ( <b>CG</b> ), poor human resources applications( <b>REMUN</b> ), brain-drain( <b>EXPTS</b> ), government bureaucracy, government policies, Underfunded projects ( <b>UNDFUNDD</b> )
2. Of the energy policy challenges outlined above, how can they be addressed fully?	Foreign direct investment (FDI), Larger fiscus allocation ( <b>FISC</b> ), Public private partnerships (PPPs), Relax repressive regulations and policies ( <b>POL</b> ), Improve on bureaucracy ( <b>REGS</b> ), Liberalise cross border trade barriers ( <b>TRD</b> ), More action instead of talk shows (ACT), Employ right caliber (EXPTs) in the wake of massive brain-drain during the 2007-2008 hyper-inflation, Reduce boardroom politics ( <b>POLIT</b> ).
3. In your opinion, what are the market risks for energy investment in Zimbabwe and does this market provide an attractive return on investment? Why do you say so?	Credit risk ( <b>CRED</b> ), Dysfunctional Money market ( <b>MNEYMRKT</b> ) leading to slow uptake of Treasury Bills, Liquidity risk ( <b>LIQ</b> ), Operational risk (OP), Political risk (POLTRSK), Low tariffs for return ( <b>TRFF</b> ), High cost of money ( <b>HCST</b> ), Indigenization policies (INDG), Political uncertainty ( <b>POL</b> ), Corruption in awarding of tenders ( <b>CORR</b> ), Company closures ( <b>CLOS</b> ).
4. The government through the Ministry of Energy is the architect of NEP. Was the private sector involved in crafting the NEP? Should the investment be government driven or private sector driven? What is the level of commitment by the government in the NEP? Can you provide any evidence of this commitment to sustainability?	No private sector involvement or consultation ( <b>CONSUL</b> ), Investment should be private sector driven ( <b>FDI</b> ), Government is broke ( <b>BRKGV</b> ), No capital inflows from private investors ( <b>FDI</b> ), Government is committed but experts constantly changed ( <b>EXPTS</b> ), Change of Permanent Secretaries ( <b>EXPTS</b> ), Change of ministers ( <b>EXPTS</b> ), Low fiscal inflows ( <b>FISC</b> ), Government policies are just talk shows ( <b>POL</b> ).

Table: A summary of categories and codes premised on answers to interview questions.

**Table 6.1b General Categories (continued)**

<b>QUESTION</b>	<b>CATEGORIES</b> <i>Responses to Questions were sorted into:</i>
5. How do you view the NEP in terms of its capacity to improve energy resources? Is there sufficient investment in energy projects? Why?	Improve on fiscal space (FISC), Government broke (BRKGV), Investment to be left to private players (FDI), Energy projects are of capital nature, (FDI), Government obsessed with sovereignty and political survival (POLTRSK), Insufficient investment (LITINV), Country Risk (POLTRSK) Operational risk (POLTRSK), Political risk (POLTRSK), Low tariffs for return (TRFF), High cost of money (HCST), Indigenization policies (INDG), Political uncertainty (POL).
6. Of the investment cited above, to what extent has the investment been used in terms of implementation? Has this met the expectations of stakeholders?	Large capital investments nonexistent (NONINV), Investment very little (LITINV) due to low tariffs(TRFF), country risk (RSK), inconsistent government policy(POL), credit risk, high cost of money(FIN), Energy resources plenty but no finance to develop them (FDI/FIN), Kariba North and South Expansion, Lupane Gas, Batoka Gorge Hydro, Mini-Hydros all underfunded (UNDFUNDD), Massive load-shedding (LOADSHED), Manufacturing industry companies closure due to power shortages (CLOS)
7. There are pieces of legislation in place for the energy sector e.g. Electricity Act and Rural Electrification Fund Act; do any of these require amendment, or should new legislation be enacted to effect what you feel?	New legislation required to effect changes (ACTs), New policies (INDG), Energy Industry private players protection (CONSUL), Duty-free energy technology equipment (EQP), Introduce levy for energy generation projects (EQP).

**Table: A summary of categories and codes premised on answers to interview questions.**

**Table 6.1c General Categories (continued)**

<b>QUESTION</b>	<b>CATEGORIES</b> <i>Responses to Questions were sorted into:</i>
8. Of all the energy resources in Zimbabwe, that is, coal, solar, biofuels, hydro-power, gas, etc, which energy resources deserve more priority in terms of research and development? Has this been catered for in the NEP? Why?	Renewables (REN), NEP catered for but underfunded (UNDFUNDD), Government is broke (BRKGVV),
9. What policy framework has been put in place to facilitate the successful implementation of the NEP? Is foreign direct investment suitable for energy industry in Zimbabwe? Why?	ZERA recommends standards for project implementation (POL), Strong drive for biogas by REA (REN), Private companies selling solar equipment (EQP), Foreign direct investment necessary (FDI)
10. The four pillars of good corporate governance and ethics, as well as transformational leadership are essential from the Board of Directors to the shop-floor in the implementation of energy projects in terms of the NEP, do you agree? Why?	Corruption rife in tender process (CORR), Structure does not support strategy (STRATEG), No transparency in policy formulation (CORR), No fairness in human resource remuneration (REMUN), No accountability or ownership of strategy (CORR), Board appointees lack merit (CORR), REA Board has to be revamped to reflect balance on trades/expertise (EXPTs), Board-room squabbles (CORR), Companies severely affected by brain-drain in 2007-2009 during hyper-inflation (EXPTs)
11. To what extent is the government involvement in energy projects implementation? Is it positive or negative interference? How?	Negative interference (INTF), Bias in project tendering via State Procurement Board (CORR), Companies awarded tenders not delivering (CORR), Government to facilitate easy import of energy technology equipment (EQP)
12. Do you have any recommendation concerning energy policy and energy problems in Zimbabwe?	Private public partnerships (PPPs), Foreign direct investment (FDI), government levy on salaries, levy on mining companies (LEVY), Employ right caliber of people (EXPTs), and bring back technocrats from overseas (REMUN). Government policy should be aligned to implementation strategy (POL)

**Table 6.1: A summary of categories and codes premised on answers to interview questions.**



**Appendix C: Table 6.2 Super and Sub-Categories**

<b>Concept</b>	<b>Super Category (Most Important)</b>	<b>Sub Category</b>
Financial Resources	FIN, FDI, LITINV, NONINV, HCST	BRKGVT, TRFF, EQP, UNDFUNDD
Corruption	CORR, CG, POLIT	
Risk Management	POLTRSK, CORR, CNTRY RSK, CRED	POL, LIQ
Infrastructure	EQP, INFR,	REN
Government Policy	EQP, INDG, POL, INTF, CONSUL, TRFF, CLOS, REGS, TRD	ACTS, LEVY, PPPs, REN, LOADSHED
Human Capital	REMUN, STRATEG, EPTs	

**Table: Inter-relationships between main categories and sub-categories, colour-coded.**

**Appendix D: Table 6.3 Emergent Categories**

<b>New Concept</b>	<b>Case Study 1</b>	<b>Case Study 2</b>	<b>Case Study 3</b>	<b>Case Study 4</b>
<b>National risk</b>	Change of government, Program sabotage	Change of policy, Brain drain, lack of expertise. Political survival	Inadequate investment, world recession. Nationalization of companies	Forced transfer of assets, Company relocations.
<b>Regulatory Changes</b>	Political changes, ZERA/EIA licensing	Revenue-cost mismatch, High taxation	Political risk insurance, Levies, Royalties	Commercial risk insurance
<b>Equity/Debt Shortfall</b>	Failure to mobilise capital, Agency problems	Cost escalation, cash constraints, Debt/Loan default	Project delays/shutdown, bureaucracy, Relocation compensation	Boardroom squabbles
<b>Socio-Politico- &amp; Macro-Economic Environment</b>	Decline in forex earnings, Western imposed sanctions, Indigenization	Floating rates, parallel rates, interest rates disparities, Liquidity crunch	Financial costs, High cost of money, Affirmative action and empowerment	Litigation, Debt default, Force majeure.

**Table: New concepts as summarized from different case study respondents.**

## **Appendix E: Graduate School of Management letter of Introduction**

Copy of the Request for Permission To Conduct The Research Study

**The Chief Executive  
Rural Electrification Agency  
P. Bag 250A  
Harare**

**15 November 2013**

**Attention Mr. J. Mashamba**

**RE: PERMISSION TO CONDUCT AN ACADEMIC RESEARCH PROJECT**

The above matter refers.

I am a student in my final year of study for a Masters of Business Administration degree with the University Of Zimbabwe Graduate School Of Management. I have completed all coursework required and I am now on the Dissertation stage.

I have chosen a research topic on energy policy implementation challenges for energy utilities. It is my view that the research results from this study will benefit ZESA, REA, Ministry of Energy And Power Development as well as other companies in the field of energy. The energy policy will be explored to find out how the implementation challenges can be effectively eradicated in order to meet the energy demand of the Zimbabwean population and other industrial needs.

Your authority to embark on this research study in REA is therefore kindly being sought.

Yours sincerely,

KENIAS MUTIRIKIDI  
MBA Student

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