**DURBAN UNIVERSITY OF TECHNOLOGY**

# EXPLORATION OF THE BENEFITS DERIVED FROM FREE BASIC ELECTRICITY PROGRAMME IN MITIGATING ENERGY POVERTY AND THE IMPEDIMENTS FACED IN ITS IMPLEMENTATION IN THE EASTERN PONDOLAND

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## ABSTRACT

When the new democracy dawned in South Africa during the year 1994, the nation witnessed a lot of transition whereby the newly elected democratic government embarked on a quest, which sought to redress the apartheid legacy. The newly elected democratic government inherited a triple challenge of inequality, unemployment and poverty, and to correct these apartheid injustices, the government drafted their first socioeconomic policy framework in the form of the White Paper on Reconstruction and Development in 1994. One of the major programmes introduced by the government within Reconstruction and Development Programme (RDP) framework was the National Electrification Programme (NEP) and its focus was to accelerate access to electricity to the previously disadvantaged communities. During the year 2000, the South African government announced its intention to provide Free Basic Services to all the poor communities and subsequent to that, Free Basic Electricity (FBE) policy was gazetted in 2003 by the South African government. Despite these poverty alleviation interventions by the government, recent statistics from Statistics South Africa (StatsSA) indicate that Limpopo and the Eastern Cape are both sitting at the bottom as the poorest provinces.

This study explores whether there are any benefits enjoyed by the indigent households with regards to FBE and the challenges that are being faced in implementing this programme in the Eastern Pondoland. The main aim of this study was to look at the extent to which the FBE programme is used to fight energy poverty and improve the quality of life amongst the poorest communities in the study area. This study used mixed research methods to investigate the research problem. Both quantitative and qualitative data were collected using household questionnaires for the respondents and interview schedules for the officials. A sample of ninety respondents from three selected municipalities that form the Eastern Pondoland was used and non-probability sampling was used to select the respondents. Additionally, five officials and three councillors from each of the three municipalities were interviewed with regards to the challenges influencing FBE implementation in the study area.

Findings from this study point mainly to the dissatisfaction in the current amount of 50 kWh per month of FBE. This finding precisely confirmed other previous research

findings on FBE by various scholars as highlighted in the ‘literature review’ of this study. The study further revealed that there were deserving households that are not benefiting on the subsidy due to various issues such as irregular updates of indigent registers, unregistered meters, tampered meters, as well as bottlenecks in the registration process. Implementation hindrances included the lack of education and awareness, funding challenges, shortage of human capital, infrastructural challenges and the lack of technical resources. With regards to the household income, the study found that there was a significant relationship between the household income and the suitability of FBE. Study also found that the household income is one of the main determinants for a household to be classified as indigent and therefore, qualify for Free Basic Services.

## DECLARATION

I, the undersigned, hereby declare that the work in this thesis is my original work, and has not previously been submitted either in part, or in its entirety, for a degree at any other university. All the sources used or quoted have been indicated and acknowledged by means of a comprehensive list of references.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| A | Ampere |
| ANC | African National Congress |
| CoGTA | Department of Cooperative Governance and Traditional Affairs |
| CURES | Citizens United for Renewable Energy and Sustainability |
| CWP | Community Work Program |
| DME | Department of Minerals and Energy |
| DoE | Department of Energy |
| DPE | Department of Public Enterprises |
| DPLG | Department of Provincial and Local Government |
| EBSST | Electricity Basic Service Support Tariff |
| EDI | Electricity Distribution Industry |
| EDRC | Energy and Development Research Centre |
| EPRET | Energy Policy Research and Training Project |
| EPWP | Expanded Public Works Programme |
| FBAE | Free Basic Alternative Energy |
| FBE | Free Basic Electricity |
| FBS | Free Basic Services |
| GDP | Gross Domestic Product |
| GGP | Gross Geographic Product |
| GVA | Gross Value Added |
| HSRC | Human Sciences Research Council |
| IBT | Inclining Block Tariff |

| | |
|---|---|
| IDP | Integrated Development Plan |
| IEA | International Energy Agency |
| IHLM | Ingquza Hill Local Municipality |
| IISD | International Institute for Sustainable Development |
| INEP | Integrated National Electrification Programme |
| KWh | Kilowatt-hour |
| LED | Local Economic Development |
| LPG | Liquefied Petroleum Gas |
| LSM | Living Standard Measure |
| MDG’s | Millennium Development Goals |
| MLM | Mbizana Local Municipality |
| MTSF | Medium Term Strategic Framework |
| NDP | National Development Plan |
| NECC | National Electrification Co-ordinating Committee (NECC) |
| NEP | National Electrification Programme (NEP) |
| NERSA | National Energy Regulator of South Africa |
| NFBE | National Free Basic Electricity |
| NGO’s | Non-Governmental Organisations |
| NIDS | National Income Dynamics Survey |
| NLM | Ntabankulu Local Municipality |
| NPC | National Planning Commission |
| NT | National Treasury |
| PASASA | Paraffin Safety Association of South Africa |
| PDP 2030 | Provincial Development Plan 2030 |

| | |
|---|---|
| RDP | Reconstruction and Development Programme |
| SALGA | South African Local Government Association |
| SANEDI | South African National Energy Development Institute |
| SE4ALL | Sustainable Energy for All |
| SHS | Solar Home System |
| SPSS | Statistical Programme for the Social Sciences |
| StatsSA | Statistics South Africa |
| UCT | University of Cape Town |
| UN | United Nations |
| VEF 2017 | Vienna Energy Forum 2017 |
| W | Watt |

# CHAPTER 1

# INTRODUCTION AND BACKGROUND

## 1.1. Introduction

This study seeks to examine the role played by the provision of the Free Basic Electricity programme in fighting the scourge of energy poverty in the Eastern Pondoland[1]. By so doing, it will look at the ways in which indigent households use electricity and to what extent access to Free Basic Electricity (FBE) is reducing the level of poverty in these households. It will further explore the obstacles that hinder effective implementation of the subsidy in the specified research area.

## 1.2. Background

Energy is the lifeblood of development in any society. The provision of energy security to indigent households assists in eradicating poverty, improve living standards and increase livelihoods (Department of Minerals and Energy, 1998:4). Government ought to play a pivotal role in determining a baseline minimum standard for basic household energy services and monitor the progress over time (ibid).

In the run-up to the local government elections that were to be held in the year 2000, when many smaller municipalities were amalgamated into larger municipalities, as part of its manifesto, the African National Congress (ANC) made promises that all indigent South African households would receive Free Basic Services (ANC, 2000). “In the year 2000, Government announced its intent to provide Free Basic Services to indigent households. In this regard, various services such as water and sanitation, refuse removal and energy were identified as basic services to be supported by the Government’s programmes with respect to indigent households” (Department of Minerals and Energy, 2007:2).

[1] According to 1999 demarcation, the Eastern Pondoland Coast is located in the Wild Coast District of the Eastern Cape Province, and encompasses portions of the Lusikisiki, Flagstaff and Bizana Magisterial Districts (Fig 3.1). See chapter 3 for a full description of a study area.

Regarding the issuance of Free Basic Electricity, a minimum of 50kWh for qualifying residents was approved and they had to agree on pre-paid metering being installed (Ballantyne, 2012:1).

According to the Department of Minerals and Energy (DME) (2003:11), on average 56% of households consumed less than 50kWh per month at the time. The allocated limit of 50kWh was considered adequate to fulfil the basic energy requirements of indigent households, which granted them access to the electronic media and household chores, for example, cooking and lighting.

Ms Phumzile Mlambo-Ngcuka, Minister of Minerals and Energy (DME), at the time, in her budget speech in May 2001, announced the establishment of a Multi-Stakeholder Task Team to devise a strategy and implementation plan for the provision of FBE to poor households in South Africa. The Task Team was mandated to investigate targeting methods and the technology required for the provision of Free Basic Electricity to these communities (Ballantyne, 2012:1).

The team was to critically examine a report that had been prepared by the Department of Minerals and Energy officials, of which key aspects include the proposal of 50kWh a month and the funding to be provided to local relevant municipalities through Equitable Share allocation as identified by the Department of Provincial and Local Government (DPLG) which later became Department of Co-operative Governance and Traditional Affairs (CoGTA).

“The principle of empowering people for dynamic and sustainable development has been reiterated many times in international, national and local declarations, but its rhetoric has not been matched by practice” (Eastern Cape Planning Commission, 2014). This ambivalent approach to rural transformation undermines development, particularly in South Africa because of its inheritance of a skewed political and social economy, with largely underdeveloped rural regions such as Eastern Cape with over 70% in depressed rural areas (ibid).

### 1.3. Statement of the problem

According to Statistics South Africa (2017), an overwhelming number of households are dependent on social grants with the Eastern Cape and Limpopo provinces leading

the pack at 36% and 32%, respectively. In North West and KwaZulu-Natal provinces, the figure stands at 26% and in the Free State at 24%.

According to the poverty trends report released by Statistics South Africa (StatsSA) in 2017, “the Eastern Cape and Limpopo have remained among the poorest provinces since 2011”, while KwaZulu-Natal’s poverty levels have reduced since 2001, but remain consistently high to put the province in third poorest place.

Human Science Research Council (2010:15) also indicated that the Eastern Cape Province is still unable to escape from structural poverty that impact on the province’s health and socio-economic profile.

Louw, Conradie, Howells and Dekenah (2008:2814) affirm that access to energy allows households to meet their most primary subsistence needs and it is the core feature of all the Millennium Development Goals (MDG’s). A lack of access to energy may not be the cause of poverty, but addressing the energy needs of the impoverished enables them access to services, which in turn will eradicate the causes of poverty to a degree.

Mohlakoana (2014:4) argues that there is a lack of studies in the field of implementation and development that concentrate on specific policy implementation processes and it is often assumed that policy implementation failures especially in developing countries are due to lack of or misuse of resources and corruption.

Therefore, the main problem that is being addressed by this study is to uncover some of the barriers that hinder effective implementation of FBE policy and the contribution it makes towards the reduction of energy poverty in the rural Eastern Cape particularly the Eastern Pondoland.

### 1.4. Study objectives

The main objective of this study is to investigate the extent to which the FBE programme is able to improve the quality of life and fight energy poverty amongst the poorest communities in the Eastern Pondoland area. It will further aim at establishing other underlying factors that may affect the implementation of this policy such as:

- Analysing households that benefit from the subsidy compared to those that do not benefit and the causes of these discrepancies.
- Looking at the level of awareness of this subsidy and other free basic services among beneficiaries and non-beneficiaries in the area.
- Looking at other hindrances in the implementation phase of the subsidy such as unregistered prepaid meters and tampered meters.

## 1.5. Research questions

To accomplish the aim and objectives of this research, the researcher will address the following questions:

1. Are there any benefits that are derived from access to FBE by indigent households in the Eastern Pondoland concerning improving the quality of life?
2. What challenges do the recipients and/or intended recipients of the subsidy encounter when applying for the subsidy?
3. Are there any difficulties that municipalities come across during the implementation phase of the subsidy?
4. Are there any provisions available that could assist in improving the implementation of the policy where necessary?

## 1.6. Significance of the study

According to a study that was done by the Department of Energy (DoE) (2009:13) whereby 3960 households were interviewed for the socio-economic impact of electrification. These households were sampled as a representative of low-income households with a Living Standard Measure (LSM) of 1-3, which is equivalent to an income of R1600 or less per month. Of the total sample, 2671 were electrified households and 1289 were non-electrified households. This sample was representative of all nine provinces.

This study revealed that the FBE initiative, which is aimed at poor households, was only received by the third of their sample. The rest, which is 57%, indicated that they

did not receive it and the other 10% were not aware of whether they were receiving it or not.

The rationale of this study is to address the difficulties that are faced during the implementation phase of the FBE policy. It is also aimed at establishing the effects or benefits that are enjoyed by those who are benefiting from this programme and to further make suggestions where improvements can be made for it to achieve the desired effects. The findings of this study could be further used by the policy makers, government and municipalities in enhancing the implementation of the policy.

Furthermore, the findings may also be used to add value to the existing literature on energy poverty and in improving the existing programmes, which in turn may assist in the reduction of the number of service delivery protests that are currently being experienced.

Scholars such as Marquard, Bekker, Eberhard and Gaunt (2007) as cited extensively in chapter two of this study have conducted studies on the impact of Free Basic Services as introduced by the South African government in reducing the levels of poverty among the poor. Lastly, in light of this existing work this study will also contribute to a debate on the effectiveness of the government programmes introduced to fight poverty particularly in the Eastern Cape.

## 1.7. Delimitations of the study

Post-local government elections of the year 2000, former President Thabo Mbeki, in his address at the inauguration of the Executive Mayor of Tshwane on 10 February 2001, elaborated on the opinion that: “The provision of free basic amounts of electricity and water to our people will alleviate the plight of the poorest among us, while plans for the stimulation of the local economy should lead to the creation of new jobs and the reduction of poverty” (Mbeki, 2001:6).

Among various Free Basic Services provided for, by the South African government, this dissertation focuses on FBE as it seeks to explore the effects of energy poverty amongst the poorest communities.

Limited time and budget compelled this study to narrow its sample to a total number of thirty (30) households per municipality. Even though the researcher acknowledges the phenomenon of policy implementation on a national scale in the South African context, to narrow the scope of this research, focus is on the officials dealing with Free Basic Services in the research area and the provincial department rather than the national one.

## 1.8. Methodology

This study employs a descriptive and analytical case study approach and it follows a mixed methods approach combining a quantitative and qualitative method for data collection. Yin (1984:23) defines the case study research method "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used." According to Zainal (2007:3) descriptive case studies are set to describe the natural phenomena, which occur within the data in question. McDonough and McDonough (1997) suggests that descriptive case studies may be in a narrative form. The descriptive theory that supports the description of the phenomenon is further discussed in chapter three.

In this study, the researcher will seek to uncover both the benefits and the difficulties faced in the implementation phase of FBE in the Eastern Pondoland area by means of conducting interviews using standardised questionnaires with grid-electrified households. Open-ended interview schedules will also be used with the municipalities' officials, an Eskom official and a CoGTA official from the provincial office.

The researcher had an opportunity of participating in the Free Basic Municipal Services Steering Committee at one of the local municipalities in the area, as an Eskom representative, hence the interest in the study area. During that period, the researcher interacted with various stakeholders, namely, municipality representatives, representatives from CoGTA provincial office, community leaders and the community members at large, in identifying the gaps that need to be addressed in the initial phase of the municipality's indigent policy.

The aim of this study was to focus on all three municipalities that form the Eastern Pondoland area, rather than focusing on only one municipality. Chapter 3 further elaborates on the study area.

The conceptual framework of this study is based upon sustainable development, whether is there any contribution FBE makes towards the country's sustainable development. This study is also framed on social policy, adopting the normative theory. The literature review of this study also takes an extensive look at the scholarly work available on FBE as well as the concepts that are underpinning this research. The following chapter further deals with the aforementioned aspects of the literature review.

## 1.9. Definition of terms

For the purpose of this dissertation, key concepts are defined as follows:

1.9.1. Free Basic Services – basic services such as electricity and or alternative energy, water and sanitation, refuse and waste removal provided by municipalities to its indigents in a sustainable manner (DPLG, 2005).

1.9.2. Energy – according to English Oxford Living Dictionaries, refers to "power derived from the utilisation of physical or chemical resources, especially to provide light and heat or to work machines".

1.9.3. Energy poverty - is a lack of access to modern energy services. These services are defined as household access to electricity and clean cooking facilities (e.g. fuels and stoves that do not cause air pollution in houses).

Access to energy is a prerequisite of human development. "A person or household that spends more than 10% of their net income on energy is regarded as energy poor or in energy poverty" (DoE, 2009:13).

1.9.4. Energy security – according to International Energy Agency (IEA), it refers to uninterrupted availability of energy sources at an affordable price.

Energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs.

On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.

1.9.5. Indigent – according to the DPLG (2005), one of the most debated definitions is that of who is an indigent. The national framework indicated that the term 'indigent' means 'lacking the necessities of life'. The framework continues to say that the Constitution provides a guide as to what the necessities of life are:

- Sufficient water.
- Basic sanitation.
- Refuse removal in denser settlements.
- Environmental health.
- Basic energy.
- Health care.
- Housing.
- Food and clothing.

Anyone who does not have access to these goods and services is considered indigent.

## 1.10. Structure of dissertation

Chapter 1: provides brief insight to the background of FBE policy, its main purpose and its shortcomings. It also deals with the rationale of the study and its objectives.

Chapter 2: will look at the existing literature and will seek to bring about conceptual and theoretical framework that will assist the direction of the study. This chapter will also review relevant legislations and programmes and their relationship to this policy.

Chapter 3: the aim of this chapter is to present the research paradigm and its limitations as well as the approach that will be used to collect and analyse data in this study. Issues related to ethics for this study, reliability and validity will also be discussed. It will introduce the chapter then outline the research design, the area of study, population, sampling method, data collection and analysis and then finish off by summarising the chapter.

Chapter 4: the aim of this chapter is to interpret the data gathered during field survey using statistical methods in an attempt to uncover aggregate views of the respondents and findings of the research.

Chapter 5: the previous chapters focused on the empirical research while this chapter will discuss and summarise the achievements of the research objectives and provide recommendations.

## 1.11. Summary

This chapter presents a brief contextual background to the study in the form of articulating the introduction of the FBE policy, which was brought about in a quest to alleviate energy poverty. It also dealt with the justification of this study by outlining the problem statement, objectives and its significance. It further introduced the methodology that will be followed in carrying out the study.

It concluded by giving a brief outline of each chapter of this dissertation, the next chapter provides an in-depth understanding of theoretical underpinnings relevant to this study.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1. Introduction

This chapter looks at the scholarly work and the departmental reports that have been presented on Free Basic Electricity (FBE), its implementation, shortcomings and benefits. Different perspectives and theories concerning the implementation of FBE policy are outlined. It starts by presenting an overview of programmes and policies applicable to this study regarding the development of post-apartheid South African Energy Policy and the subsequent introduction of the FBE policy. It further articulates the conceptual and theoretical framework applicable to this study. South African perspective on the concept of energy poverty is further analysed and lastly the summary of the chapter is presented.

## 2.2. Post-1994 programmes and policies applicable to this study on South African Energy Policy

In her doctoral thesis, Mohlakoana (2014:23) highlights the fact that “the beginning of the 1990s saw South Africa going through an important period in its politics. This transition was brought about by the change of government from the infamous apartheid government to a democratic state. The transition was also important in the policy making and implementation processes as most of these had to be adjusted in order to suit the new political order and its objectives, particularly in terms of service provision”. For the purpose of this study, it is justifiable to look into the development of the South African energy programmes in the post-apartheid era.

“The general approach to policy formulation is to recognise problems, to identify causes and solutions, to analyse their implications and make choices, and to implement, monitor and evaluate the effects of policy” (DME, 1998:6).

Hughes, Howells and Kenny (2002:4) assert that the South African economy is energy-intensive, meaning that the amount of energy South Africa uses exceeds its economic output in rand value. However, despite the recent blackouts[2] the South African national energy supply is secure and well structured with electricity forming the integral part of this sector.

According to the DME (2005b:12) Eskom, supplies 95 % of the electricity demand, with the remainder coming from small inputs from local authorities. Eskom boasts one of the lowest electricity costs in the world because of South Africa's access to inexpensive coal. Certain policies regulating the energy sector were developed because modern energy, especially electricity, was considered one of the main components in providing basic services to the poor and disadvantaged majority of South Africans.

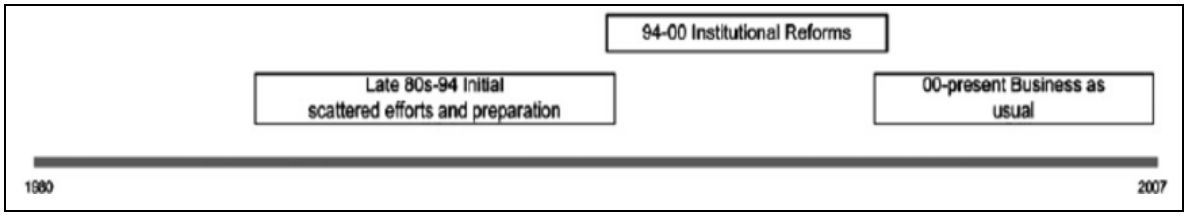
### 2.2.1. The National Electrification Programme

The demise of the apartheid regime and the formation of the new government of national unity in 1994 was the turning point, which provided the foundation for the policy, and institutional upgrades of the electrification programme. Marquard, Bekker, Eberhard and Gaunt (2007:11) points out the fact that, during the transition period, in South Africa, between 1994 and 1999 apartheid frameworks and policies were dismantled or restructured, to form a new constitution. Consequently, new administrative institutions were established at all levels of governance, and other institutional reforms were implemented in various areas of government. From the year 2000 to the present, these institutions began to reflect progress in most cases, in policy-making and governance returned to normality. The electrification programme followed that similar pattern.

[2] Colloquially known as 'Load shedding', it is done countrywide as a controlled mechanism to respond to strain in the national grid to protect the electricity power system from a total blackout. While we generally use the word blackout loosely to mean "no lights", a countrywide blackout has much more serious consequences, which can occur when there is too much demand and too little supply, bringing the power system into an imbalance and end up tripping the power system in its entirety (Eskom). South Africa experienced load shedding in 2008 and 2014 respectively due to a strain in the national grid.

Implementation of new policies and institutional reforms within the context of the electrification programme can be divided into three phases as illustrated in Figure 2.1 below:

**Figure 2.1: Policy and institutional phases**




Source: Marquard (2007)

Phase 1 – between 1980 and 1994, the electrification programme evolved from initial unrelated efforts to a cohesive programme on the policy agenda with associated firm political backing,

Phase 2 – from 1994 to approximately 2000, the programme became part of the Reconstruction and Development Programme (RDP) and was committed to much higher connection rates; and

Phase 3 – from around 2000 onwards, connection rates dropped to lower levels and the programme was formally institutionalised in government (Marquard *et al*, 2007:11).

In delineating the key policy, institutional reforms and decision-making moments of the programme, the most logical and cohesive approach to follow is these three phases.

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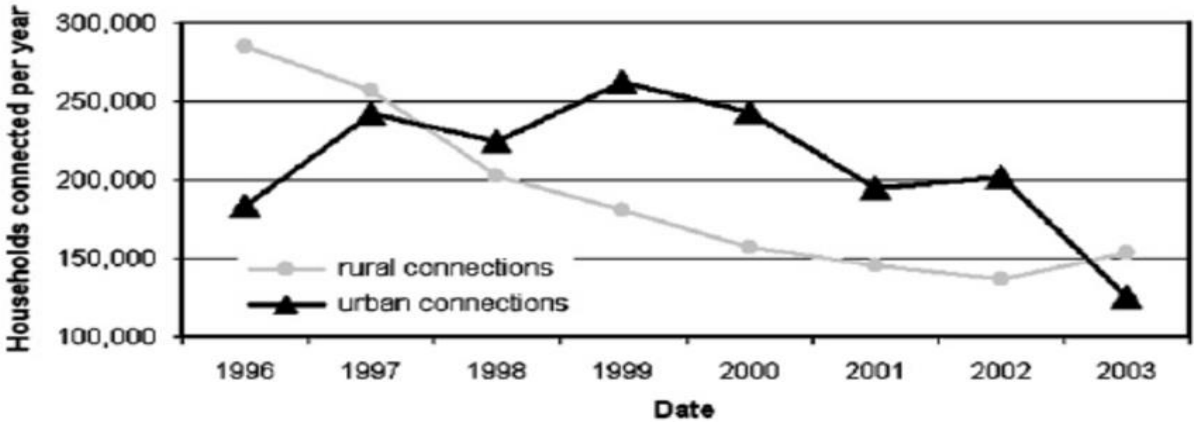
In the second phase, the newly elected government of national unity, the 'Electricity for All' programme was transformed into the National Electrification Programme (NEP) and connection rates were considerably increased (Marquard *et al,* 2007:12).

Eskom and many municipalities were now able to implement the electrification programme in the identified areas by taking over defunct apartheid-era distributors. Since Eskom's licensed area of supply included the under-developed rural areas and had the largest backlog in electrification, the electricity provider undertook the

electrification of the majority of RDP targets. The high number of electric connections installed, as part of the electrification programme by Eskom, in the rural areas during Phase 1 was significant, even though this trend shifted dramatically during the period from 1998 to 2002 as evident in Figure 2.2. In Phase 2 (1994 to 1999), the emphasis was on overcoming institutional barriers to significantly improve connection rates and devise creative ways to dramatically lower costs. The programme was funded by mainly an implicit levy on electricity sales to existing customers by Eskom. Income from the levies were partially distributed to local authorities through the National Energy Regulator (NER) from 1996 (NER, 1998:11).

**Figure 2.2: Annual number of urban and rural connections [NER 2003]**




Source: NER (2003) cited in Bekker, Eberhard, Gaunt and Marquard (2008)

During the initial stages until mid-1990s, the focus was on rural connections, thereafter until 2002, the programme was dominated by urban electrification when the focus again shifted to mainly rural electrification. Consequently, an in increase average expenditure necessitated the funding of bulk infrastructure to strengthen and extend transmission networks and transformers. Consequently, progress in the third phase in terms of the connection rate, the formalisation of electrification policy and institutions, and the integration of the programme with other policies and development processes was slow. The slow progress was attributed to various factors including the commercialisation of Eskom. To speed up the electrification programme, the state opted to shift the programme into the DME. This process necessitated the

establishment of the National Electrification Co-ordinating Committee (NECC) in April 1999 (Marquard *et al*, 2007:12).

The Integrated National Electrification Programme (INEP), a subcommittee within the DME, was established to house the programme in 2002. The INEP was responsible for the administration and implementation of the programme including planning and funding, which was derived from the fiscus. The objectives of programme shifted from solely focussing on connection targets to include a broader set of development criteria. Further significant developments in Phase 3 included the implementation of an off-grid photovoltaic programme for inaccessible rural areas, and the provision of free basic electricity for poor households (ibid).

### 2.2.2. The White Paper on Energy Policy

The newly formed democratically elected government presented some major shifts in the energy policies that were in place and this necessitated the publishing of this White Paper since the last White Paper on Energy Policy was published in 1986 during the apartheid era (DME, 1998:5).

As Winkler (2007:7) posited that, the process leading to the formulation of this White Paper was contracted to the Energy and Development Research Centre (EDRC) at the University of Cape Town (UCT). The process was divided into two stages, namely, consultation and writing, and then production and approval. The first stage included a number of stakeholder forums leading to a discussion document as a basis for public comment. After inviting public commentary, a National Energy Summit was held that was to determine consensus on energy sector goals.

The second stage which was dominated by consultative meetings on the production and approval part of the process, led to a draft paper in June 1996.

Several political and administrative challenges led to the draft paper becoming public in July 1998 then the Parliamentary Portfolio Committee on Energy thereafter hosted a series of public hearings and the final paper was published at the end of 1998 (Ibid).

DME (1998:9) recognised national energy and economic demands, while accepting the international energy agenda and the need to identify appropriate energy supply

and use. The following sections, 2.2.2.1 to 2.2.2.4 provides a summary as documented in the White Paper on Energy Policy of the Republic of South Africa of 1998. It is divided into four parts, namely: (1) context, objectives and priorities for energy policy; (2) demand sectors; (3) supply sectors; and (4) cross-cutting issues.

#### *2.2.2.1. Context, Objectives and Priorities for Energy Policy*

DME (1998:5) postulates that before deriving detailed energy policy objectives, however, it is necessary to understand the energy policy context and energy sector challenges. Three aspects are considered:

- economic, social and environmental policies and forces;
- the nature of the South African energy sector and its linkages with broader forces; and
- what the sector needs to achieve overall policy goals.

#### 2.2.2.2. Demand sectors

DME (1998:9) puts emphasis on the provision of energy services to low-income and rural households in a bid to redress the problem of inadequate energy services to these areas and to make convenient and healthy fuels available to these households. Consideration was given to accessibility fuels and essential appliances as well as fuel availability and pricing. The construction of thermally efficient low-cost housing as an opportunity to reduce energy consumption and to conserve the environment was also considered.

Despite obstacles such as a poor economy; a lack of awareness, information and skills; a lack of efficient technologies; a high economic return criteria and high capital costs, was government committed to promoting greater energy efficiency. The need to provide equitable access to affordable public transport was also noted and its challenges were identified. The provision of energy for specific sectors was also noted (ibid).

#### 2.2.2.3. Supply sectors

There is a considerable number of challenges faced by the distribution industry in trying to meet electrification targets and continue to provide low cost, equitably priced, quality supplies to consumers (DME, 1998:12). The White Paper further proposed that

the distribution industry be accordingly restructured into regional electricity distributors and the government to establish a transitional process that will lead up to the establishment of independent regional electricity distributors.

According to the DME (1998:13), the coal industry was to remain deregulated and government would continue to investigate options for the utilisation of coal discard streams. It was also proposed minimal governmental intervention and the regulation of the liquid fuel sector while emphasising international competitiveness and investment, appropriate environmental and safety standards, sustainable employment and the inclusion of local black interests in ownership (ibid).

#### 2.2.2.4. Cross-cutting issues

DME (1998:14) highlighted the following issues as the need for:

- Integrated energy planning.
- Good statistics and information.
- The promotion of energy efficiency.
- A good balance between environmental, health and safety and development goals.
- Appropriate research and development to be carried out.
- Development of human resources.
- Capacity building, education and information dissemination.
- International energy trade and co-operation to be facilitated.
- The alignment of fiscal and pricing issues.
- Create mechanisms to improve governance and institutional capacities.

### 2.2.3. Electricity Basic Services Support Tariff (EBSST)

In 2000, government announced its intention to provide free basic services to the indigent. The main areas of focus were access to free potable water, refuse removal and free basic energy in the form of liquid fuels and electricity. DME considered providing free basic energy in the form of liquid fuels and electricity (DME, 2003:5).

Concerning the formulation of EBSST policy otherwise known as FBE policy, Ballantyne (2012:1) gives a clear background; he starts by pointing out the commissioning of EBSST Multi-Stakeholder Task Team by the then minister of the DME, which held its first meeting on the 9 February 2001. Some of the starting points of this team was to critically examine a 'straw dog' report that had been prepared by the DME officials. Some of the key aspects of this report were that the FBE allocation was proposed at a rate of 50kWh a month of free electricity and that the funding for this allocation would be provided from the local government equitable share, an unconditional grant supplied to local government from the National Treasury via the DPLG. The unconditional status of the grant meant that local authorities were not forced to use any portion of this grant for the provision of FBE.

In order to gain insight into the issues involved in different methods of targeting and delivering FBE, the Task Team commissioned eleven pilot projects throughout the country in Eskom supplied areas. The University of Cape Town (UCT) produced a research report based on the experiences with these pilot projects and this report was found by the task team to be extremely useful in arriving at its policy recommendations (Fowles, 2004:2).

The main issues that were identified to be useful in influencing the provision of FBE were:

- The level of the free basic electricity allocation,
- Identification of recipients of the allocation,
- The cost implications of such allocation, and
- The sustainable sources of funding for such an allocation.

#### 2.2.3.1. The level of the free basic electricity allocation

The level of free basic electricity, together with the associated cost was determined, based on data collected from research. It was decided that 50kWh of electricity per month be provided free to all poor households connected to the national electricity grid.

The motivation provided by the DME (2003:11) on the provision of 50kWh was based on the following:

- “56% of households in South Africa connected to the national grid in Eskom’s licensed areas consume on average less than 50kWh of electricity per month. This is more than the last two quintiles of the population that can be classified as poor”;
- “50kWh per month is considered adequate electrical energy to meet the needs for lighting, media access and limited water heating and basic ironing (or basic cooking) for a poor household”;
- “The level of 50kWh has been spoken of generally at national level and has been accepted as a norm in respect of free basic electricity. This quantity has achieved widespread political and community acceptance and expectation”; and
- “The utility of this 50kWh can be increased by using energy efficiency lighting interventions and other energy saving initiatives”.

#### 2.2.3.2. Identification of recipients of the allocation

**(i) Broad-Based Approach**: due to the challenges of identifying ‘the poor’ within communities, a broad-based approach was considered whereby all households in a defined area and with legal electricity connection would receive a free allocation. It was accepted that this method was not the most efficient and will result in some households receiving the free allocation that was not intended for them. Furthermore, this method would cost more to implement, then DME recommended a self-targeted approach for the implementation of the first phase of the EBSST roll out.

**(ii) Self-targeted Approach**: Ballantyne (2012:2) points out that the deliberations were held in this regard and eventually two possible methods emerged from these deliberations, namely:

(a) Self-targeting with current-limiting - whereby those who wished to receive the free allocation would need to down grade their supply connection to 8A or 10A. This approach would be much less costly to implement. This method would limit the loading on networks and would remove the need to reinforce networks, which the implementation of a **broad-based approach**

would have required. However, this approach required a visit to site to set down the trip level of the prepayment meter that proved to be a costly exercise for a Service Provider.

(b) Self-targeted approach without current-limiting – households using on average, less than a pre-determined amount of electricity of up to 150kWh per month were entitled to apply for the free basic electricity allocation. To reduce administrative costs, the electricity Service Provider could automatically select those households that comply with these requirements and move them to the free basic electricity tariff. The agreement of the Service Authority must be obtained to ensure payment of the Service Provider in respect of free basic electricity provided.

### 2.2.3.3. The cost implications of such allocation

As per the report produced by the UCT (2002), the costs of implementing the programme were divided into two, namely: (i) technical/administrative costs and (ii) the costs of funding the FBE.

(i) In terms of technical/administrative costs it was established that providing the allocation of free electricity could incur exorbitant costs in the following:

- The upgrading of billing and prepaid vending systems;
- The installation of new prepayment meters which are compatible with the system to be used for the issue of tokens for the free electricity;
- Upgrading electrical networks in rural and even some urban areas to cope with a possible surge in demand for electricity; and
- The provision of the administrative capacity to deliver the system to beneficiaries.

No reliable estimate was provided for these potential costs but it was suggested that for a broad-based approach, the national cost would be of the order of R800 million. This figure could be reduced substantially if the self-targeted approach was adopted.

(ii) With reference to funding of the free basic electricity allocation, the UCT report (2002:131) addressed five possible funding sources but suggested that only two of these options were realistic, namely:

- EBSST should be financed from state treasury, or
- EBSST should be financed by more than one subsidy.

The report examined various methods whereby EBSST can be financed from the state treasury and following advantages were advanced by UCT (2002):

- *Funding and implementation of the EBSST is the responsibility of the national government because it is national policy.*
- *The national funding enables government to implement a common policy to the EBSST countrywide.*
- *The national government can evaluate the EBSST against other national priorities, particularly other national redistributive programmes.*
- *The national government is able to supervise the programme's expenditure (particularly decisions on increases) in the light of macroeconomic conditions and national treasury considerations.*
- *The government is able to resolve any fiscal risks arising from the implementation of policy.*
- *The government can allocate of funds equivalent to the cost of implementation –with minimal risk of under- or over-funding – a real risk of the earmarked taxes.* (UCT, 2002:133)

*The Cabinet would then appoint a department responsible for the programme, and parliament would allocate funds to the appointed department. The department could choose to manage these funds either* ***as normal programme funding****, a* ***dedicated fund*** *or as a* ***conditional grant*** *for either provincial or local government.* (UCT, 2002:133)

The funding of the free allocation of electricity by means of **cross subsidies** from customers consuming more than 50 kWh per month was proven to be problematic in such a way that the:

- The possible increasing input costs to commercial and industrial customers adversely affecting their global competitiveness.
- Differing proportions of 'wealthy' and 'poor' customers in many areas would mean that widely varying tariff increases would be necessary. This is not consistent with the objectives of Government's Energy White Paper and its intention to restructure the electricity distribution industry (EDI), and ultimately rationalise tariffs, in the near future. In addition, the NER stated that it would not approve any tariff increases designed to fund the cost of the FBE allocation via cross subsidies. The stance resulted in the high-profile challenge by the City of Cape Town who claimed they have the right to set their own tariffs. The case was settled out of court, so the industry had no clarity by then as to who has the authority to set electricity tariffs (UCT, 2002:135).

#### 2.2.3.4. Principles and restrictions of providing Free Basic Electricity

The Task Team established that the free basic electricity service would be provided by various electricity service providers. Implementation of a national policy necessitates clear directions on principles and restrictions relating to the implementation of the FBE allocation (Fowles, 2004:4).

The Task Team recommended that the following principles form part of the national EBSST policy:

- The free allocation of electricity units is to be made available to all households that meet the requirements of self-targeting. Where more than one dwelling is bulk metered, the service providers will need to consider this in allocating the free basic service.
- Normal connection fees levied by the distributor to be applied to all new services.
- Basic charges/fixed charges will only become effective when monthly consumption exceeds the free allocation.
- No carry over from one month to the next of the free allocation or any portion of the free allocation is to be permitted for credit metered customers. Free allocations not claimed by prepaid customers in any calendar month are lost.

- For credit-metered households the free allocation is only applied to the account if energy is consumed in any billing period. If the consumption is less than the free quota, only the amount of the consumption is issued free.
- Consumer discipline must be upheld. No free allocation is to be made available following disconnection from the electricity supply for reasons normally applicable in the distributor's environment such as meter/system tampering or non-payment, until the consumer has met all the distributor's/authority's requirements to have the supply restored.
- No cash/voucher/service to be considered, in lieu of the free basic electricity allocation or non-grid operational subsidy for those households that do not currently have an electricity service. The free basic electricity allocation/subsidy will only be effected when an electricity supply is made available.
- Although the policy allocation for the poor is 50kWh per household per month it may be necessary for electricity service providers to phase this allocation in, starting at a lower quantity, in the interests of affordability and timing, both for the service authority/ provider and customers.

### 2.3. Implementation of Free Basic Electricity policy

For almost fifteen years since the implementation of Free Basic Electricity Policy, there are still some gaps that have not yet been addressed and this study was motivated by such and will come up with some recommendations in addressing them, as energy poverty persist in trapping the marginalised communities.

National Energy Regulator of South Africa (NERSA) concurs with the above sentiment on its report on the National Free Basic Electricity (NFBE) for the financial year 2015/2016. Attached as Annexure D, is the NERSA report, which lists some policy issues on FBE implementation to various stakeholders, the proposed mitigation and the progress report. The listed stakeholders are the following:

(i) Department of Energy (DoE) and National Treasury (NT);
(ii) South African Local Government Association (SALGA) and CoGTA;
(iii) Eskom; and

(iv) Department of Public Enterprises (DPE).

Chapter 4 of this study also looks at the bureaucratic approach concerning the implementation of this policy as well as some of the challenges cited by the above-mentioned NERSA report. From this scrutiny, it is evident that there is still a lot more that needs to be done by all the relevant stakeholders in addressing the implementation issues around the FBE policy and its impact on enhancing the standard of living in terms of energy poverty. By observing these deviations in this policy, one can conclude that politicians made promises that free basic services would be provided in order to alleviate poverty in South Africa before any planning had been undertaken on delivering on the promises.

For the purpose of this study, it would be justifiable to look at some of the setbacks that were experienced leading up to the adoption of the EBSST policy. Difficulties in the implementation of the EBSST stems from the lack of consensus between the stakeholders that were involved in its implementation. Fowles (2004:5) in his paper on the 'Domestic Use of Energy Conference' highlighted that different stakeholders held differing positions in the EBSST implementation, namely:

### 2.3.1. Cabinet's position

Even though there was no formal, confirmation that could be obtained from DME officials, Cabinet unilaterally approved the EBSST policy based on the following principles:

- The free allocation of electricity to qualifying households to be set at 50 kWh per month;
- Recipients of the free allocation to be identified by means of self-targeting;
- Funds will be provided in the fiscus to pay for the operating cost of the free allocation.

### 2.3.2. Department of Provincial and Local Government's (DPLG) position

Representatives from the DPLG who were members of the Task Team attended very few meetings of the team until December 2002 when they advised the Task Team that

they could not accept the principles of the draft policy recommendations. They believed that as electricity service delivery is a local government competence and that DPLG determines the equitable share (and FBE grant) allocations, it will decide on the policy. They then conducted provincial road shows during which they advised municipalities:

- That each municipality could decide on the level of allocation it wished to provide up to 50 kWh per month, depending on how much it could afford;
- The municipality could decide who it wished to receive the FBE allocation and suggested they use national guidelines on identifying indigent households;
- That should Eskom be the de facto electricity service provider in the municipal area or portion of this area; Eskom would be required to negotiate an agreement in respect of delivery of services with each municipality. The municipality for the free electricity provided on behalf of the municipality would then reimburse Eskom.

### 2.3.3 Eskom's position

For Eskom, it appeared that the prospect of concluding service delivery agreements with over 200 municipalities with differing ideas of what FBE system they wanted to implement would be daunting. After a lengthy delay, during which discussions were held with senior government representatives, Eskom produced a 'Funding Agreement' under which terms it was prepared to provide an FBE allocation to its customers in municipal areas. The general principles of this agreement are:

- The allocation will be 50 kWh per qualifying household per month;
- The municipality will be invoiced at the rate of 34.5 cents per kWh (excluding VAT) provided as part of FBE. This was lower than its standard 'Homelight' tariff.
- It will only implement one of two methods of identifying recipients, namely: *standard method* or *municipal indigent policy method.*

Eskom will not charge the municipality its implementation or administration costs provided one of these methods be used. It is not prepared to vary either of these methods to meet any differing requirements from a municipality.

A critical point to note is that Eskom resolved to use 20 amps (A) as the current limit for recipients of FBE. It originally felt strongly that this limit should be 8A and reluctantly agreed to move to 10A at the request of the municipal representatives on the Task Team. Eskom representatives state that this change from the Gazetted policy limit of 10A was a result of government pressure.

Consequently, DME decided to publish the 'Electricity Basic Services Support Tariff (Free Basic Electricity)' policy as Government Gazette No. 25088, dated 4 April 2003 in gazette notice 1693 of 2003.

This policy closely resembled the draft final report of the Task Team but by the time it was published, some of its requirements conflicted with the position that the DPLG conveyed to municipalities. It appeared that the publication of this policy achieved nothing more than creating more confusion in an already confused situation.

### 2.4. Assessment and evaluation of Free Basic Electricity

The free allocation of 50 kWh per month was regarded as adequate by government for basic lighting, household chores and access to electronic media because poor households generally have low demand for electricity. The implication being that these households would therefore consume the free basic electricity and only pay the approved tariff for all units of electricity consumed that exceeds the free allocation, (DME, 2003:12). This argument is substantiated by the research finding that 'on average, 56% of households consume no more than 50 kWh per month' (DME 2003:11).

As pointed out in the previous section that, seemingly the politicians pre-empted the decision to provide free basic services to the poor by making promises to them without having a clear plan on how to deliver on those promises. Surprisingly, from the above statistical analysis by the state, the justification for such low electricity usage was not investigated but accepted as convenient 'fact'. Clearly, acceptance of low electricity consumption is a reflection of the apartheid legacy and poverty, and to change this mind-set more than 50 kWh would have to be offered. Some researchers such as Makonese *et al.*, (2012:3) contend that "despite an increase in the amount of FBE

provided to the poor and indigent households in some major cities, the FBE is still pegged at a level too low to make a major impact on people's quality of life. FBE is provided on a household basis but does not pay regards to larger households, making it difficult for these households to manage and economise with 50 – 100 kWh of free electricity". They go on to propose that a minimum of 200 kWh of free electricity would be sufficient to meet basic energy needs of the poor and contribute substantially to social enhancement of the poor, as this 50kWh allocation was based on research data collected more than a decade ago when FBE was first proposed. The possibility that standards of living have since improved and the average South African household now requires more energy must be taken into account (ibid).

Ruiters (2011:128) gives a typical illustration into how 50 kWh of electricity per month can be utilised. Table 2.5 below indicates how much of the energy is utilised by essential household appliances. As reflected in Table 2.5, a small fridge if used for approximately 7 hours – an unreasonable assumption, given that fridges must be on all the time – would use up the total FBE allocated. A hotplate (of 1,000 watts) used for cooking two hours a day alone would exceed the FBE quota per month. It is clear from the illustration used below that the FBE amount is, therefore, entirely inadequate for basic living needs. According to Mapako and Prasad (2005:4), it is for this reason that many people with access to grid electricity supplement their energy needs by using firewood or liquid fuel for cooking. The consequences of such a minimalist programme keeps the poor in poverty and forces them to use unsafe forms of energy to fulfil their basic necessities. Therefore, FBE cannot be defined as "developmental" (ibid).

**Table 2.1: Energy usage for Household Appliances**

| Item | Power rating (W) | Daily use (h) | Days used | Monthly energy consumption (kWh) |
|---|---|---|---|---|
| 1x Energy saver light | 11 | 5.0 | 30 | 1.7 |
| 1x TV | 35 | 6.0 | 30 | 7 |
| 1x Iron | 1000 | 4.0 | 6 | 24 |
| 1x Kettle | 1000 | 0.5 | 30 | 15 |
| 1x Hot plate | 1000 | 1.0 | 25 | 25 |
| 1x regular light | 100 | 5.0 | 30 | 15 |
| 1x Refrigerator (20L) | 250 | 6.5 | 30 | 49 |

Source: DME (2003) cited in Ruiters (2011)

Ruiters (2011:139) makes an assertion that, “considering the legacy of white privilege, the still huge development gap between rich and poor and black and white and the extreme poverty and unemployment in South Africa, it would be better to rethink the policy so that FBE allotment can be considerably increased. Any alternative should recognise the need for redress and social justice and the self-evident, multiple, social and economic benefits of having an adequate free supply of electricity”.

Despite the preceding analysis of the administrative hurdles one cannot turn a blind eye to the fact that FBE has offered some form of relief to some of the impoverished households but there is still a lot that needs to be done for it to achieve its stated aims such as reducing energy poverty and, health and safety risks especially to women. As Mapako and Prasad (2005:5) suggest that, some benefits are derived from this policy and the government’s electrification programme, namely:

- The longer use of better quality lighting;
- Reduction in fuelwood use;
- Perception of improved safety and security; and

- Access to media through the use of radio and television which has broadened the exposure of the marginalised to current affairs.

This thesis aims to scrutinise other aspects that are at play in its implementation, both administrative and technical, such as tampered meters, unregistered meters, customer awareness, the proximity of the vendors, municipal capacity, etc.

### 2.5. Conceptual framework and social policy applicable to this study

Jabareen (2009:49) defines conceptual framework as a "network, or a 'plane', of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena. The concepts that constitute a conceptual framework support one another, articulate their respective phenomena, and establish a framework-specific philosophy. Conceptual frameworks possess ontological, epistemological, and methodological assumptions, and each concept within a conceptual framework plays an ontological or epistemological role".

CURES report (2009:1) alludes to the fact that eradicating energy poverty will in turn eradicate absolute poverty. Therefore, it is within the context of this study to look at poverty holistically.

Mvondo (2010:14) states, "Poverty is one of the oldest scourges of humanity. Throughout the history and across all societies, there have always been people who possess less than others and those who are exploited for the benefit of the powerful. While this reality seems linked to the very fabric of human society, the extent to which some groups of people in certain parts of the world are deprived from essential survival needs, is alarming. The elimination of poverty has become a key concern for politicians and international development organisations; at the same time, the fight for social justice and welfare has gained momentum among poor people and social activists".

The link between poverty and access to energy was vociferously reaffirmed at the World Summit on Sustainable Development held in Johannesburg in 2002. One of the significant outcomes of the summit was the Johannesburg Plan on Implementation, which stressed the main links between energy and the Millennium Development Goals (MDG's) (UN Energy, 2005). Even though there is no separate MDG for energy it was acknowledged that in order to fulfil the MDG objectives, substantially higher standards

of energy and greater quantities of energy services that current approaches provide are needed (UN Energy, 2005). Even though it is quite clear that the MDG's set target was not met hence the new Sustainable Development Goals (SDG's) of 2030, the preceding reference to the MDG's was to highlight the link between access to energy and poverty.

### 2.5.1. A concept of Sustainable Development

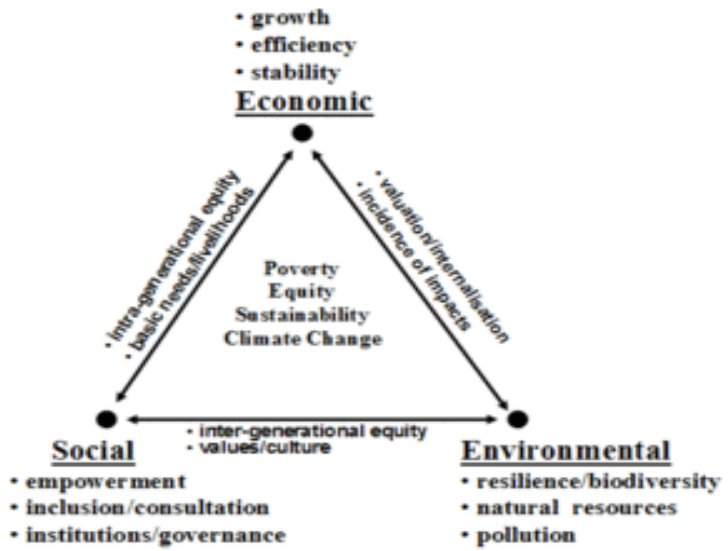
"Sustainable development is defined as development that meets the present needs and goals of the population without compromising the ability of future generations to meet theirs" (International Institute for Sustainable Development, 2015). The concepts of sustainable development and sustainable energy are interrelated and over the years, they have played a central part in the countries' economic development.

Davidson (2002a:2) define economic development as the country's economic progress which influences people to willingly pay for goods and services that supplements income and improves production. The countries' achievement of both sustainable development and economic development leads to social development, which they define as the improvements in the well-being of individuals and society and it leads to an increase in social capital, institutional capital and organisational capital. These developments are dependent on the country's policy interventions towards poverty eradication. Figure 2.3 below shows all the elements that are a contributing factor to a country's sustainable development.

Underpinning the aforementioned developments is the country's sustainable energy. FBE is one of the aspects that should contribute to a country's sustainable development, the context of this study interrogates whether the FBE serves as a contributory factor in the sustainable development of the impoverished and marginalised South Africans in terms of energy poverty.

As defined by Davidson (2002a:11) "sustainable energy provides affordable, accessible and reliable energy services that meet economic, social and environmental needs within the overall developmental context of society, while recognising equitable distribution in meeting those needs".

**Figure 2.3: Elements of sustainable development**




Source: United Nations Conference of Sustainable Development (2011)

Willis (2011:8) suggests, “Development can be considered at a number of scales. These go from the individual, the local community, the regional, the national and the global (among others). How development is defined may differ by scale and, in addition, the approaches to development may be similarly scale dependent. Inequalities can be revealed if you look at particular spatial scales.” For example, national level development figures do not reflect the variations between regions in a country. In any discussion on development, spatial inequalities are very important. Some forms of development may adversely affect the inequalities between places, while other forms of development may make a concerted effort to eliminate spatial inequalities.

Momsen (2004:89) further asserts that social inequalities are as important as spatial inequalities. Internationally, women as a group have been excluded from the many benefits of social and economic development. Similarly, certain ethnic groups regionally or nationally may also be deprived of opportunities, or may be denied decision-making power in the conception and implementation of development projects. This exclusion of women and ethnic groups can lead to the demise of cultural practices and institutions and a decline in self-respect and self-esteem.

How to deal with social diversity is a key theme in development thought, not only in trying to implement development practice, but also in actually defining what is meant by ‘development’.

Willis (2011:24) notes that debating development on an academic level is captivating, but it is more significant to consider how these debates translate into actual policies ‘on the ground’ which affect millions of people internationally. Willis (2011:27) compares the individuals, who are central to development, to actors. “The variety of approaches involves a range of actors, with shifting emphases being placed on these actors depending on the approach adopted. The degree of agency, which these actors are perceived to have, will also be affected by a particular interpretation of power distributions. Having an agency implies that an individual or group is able to make decisions and do things based on their own choices. The other extreme, having no agency, means that there is no free will and individual behaviour is controlled by other actors.” (ibid).

According to Table 2.6 below a variety of actors - from individuals to large-scale global organisations such as the United Nations are involved in development. The scale of differences are evident, but it is vital to note that an increase in scale does not imply an increase in influence. For example, certain individuals can be incredibly influential on a large scale because of their political or economic position, but some individuals can also have very little influence even within their own households. The President of the United States of America and a woman from a rural village in South Africa are both individuals, but their ability to influence events and their life choices are very different in scope.

**Table 2.2: Actors in development**

| Actor | Activities |
|---|---|
| Individual | An individual may have many opportunities and influence, or be left with very little agency because of social variables including level of income, class, gender, ethnicity and age. |
| Household | A group of people, not necessarily belonging to the same family, who live in the same dwelling and share household expenses, can function as a unit to ensure that everyone in the household have their basic needs met. |
| Community | A group of people with shared interests in some senses; usually, living in the same location, e.g. a village or urban district. A community is also based on a similar social identity. |
| Government | Operates at a range of scales from local and municipal government to national government. It can be interventionist or regulatory and can establish economic and policy frameworks. |
| Non-Governmental Organisations (NGO's) | Organisations that are privately run and do not make a profit; can provide local communities with services to set up projects, create income-generating opportunities, or improve social relations. NGO's can be very local community organisations, or very large international organisations such as Oxfam or Médecins Sans Frontières |
| Private companies | Representatives of the economic market; ranging from small businesses or global corporations |
| Multilateral organisations | Can set global agenda for economic policies; promote global peace; important sources of aid and technical assistance. Examples: International Monetary Fund, United Nations, World Bank |

Source: Willis (2005)

### 2.5.2. Sustainable Energy

Preceding section 2.5.1. mentions that it is unjustifiable to look into sustainable development without also looking into sustainable energy, as they are interrelated. In addition, the fact that sustainable development is underpinned on sustainable energy.

During the year 2012, world's leaders came together to launch the United Nations (UN) Sustainable Energy for All initiative (abbreviated as SE4ALL) where the former UN Secretary General Ban Ki Moon established a high-level group to mobilise action. SE4ALL initiative set three goals to be attained by 2030, namely:

1) Ensuring universal access to modern energy services;

2) Doubling the rate of improvement in energy efficiency; and

3) Doubling the share of renewable energy in the global energy mix.

The world's leaders reconvened in September 2015 to agree on 17 Sustainable Development Goals (SDGs). Goal SDG7 advocates securing access to 'affordable, reliable, sustainable and modern energy for all by 2030' (United Nations Energy, 2016).

Social and economic well-being dependent on access to efficient and safe energy. Yet, globally, more than 1 billion people do not have access to electricity, while over 3 billion people depend on polluting, inefficient fuels such as firewood for cooking and without rapid progress on SDG7, it will be impossible to deliver on other SDGs by 2030 (ibid).

Sustainable development is dependent on access to affordable modern energy service - the 'missing' Millennium Development Goal (MDG). Access to the afore-mentioned electricity strengthens the foundations of health, education and livelihoods. Modernising cooking fuel usage through greater fuelwood efficiency or substitution can improve health and reduce time spent gathering firewood, especially for children and women, allowing them to pursue education and enterprise opportunities and enjoy more leisure time (Wilson, 2014).

In prioritising goal SDG7, SE4ALL should concentrate their efforts on alleviating indigence and developing resilience to the impacts of climate change through facilitating people's access to energy. Other objectives such as reducing carbon emissions should not compromise that goal. Efficient solutions are essential, and renewable energy technologies for delivering off-grid energy can be flexible and practical, while improving affordability (ibid).

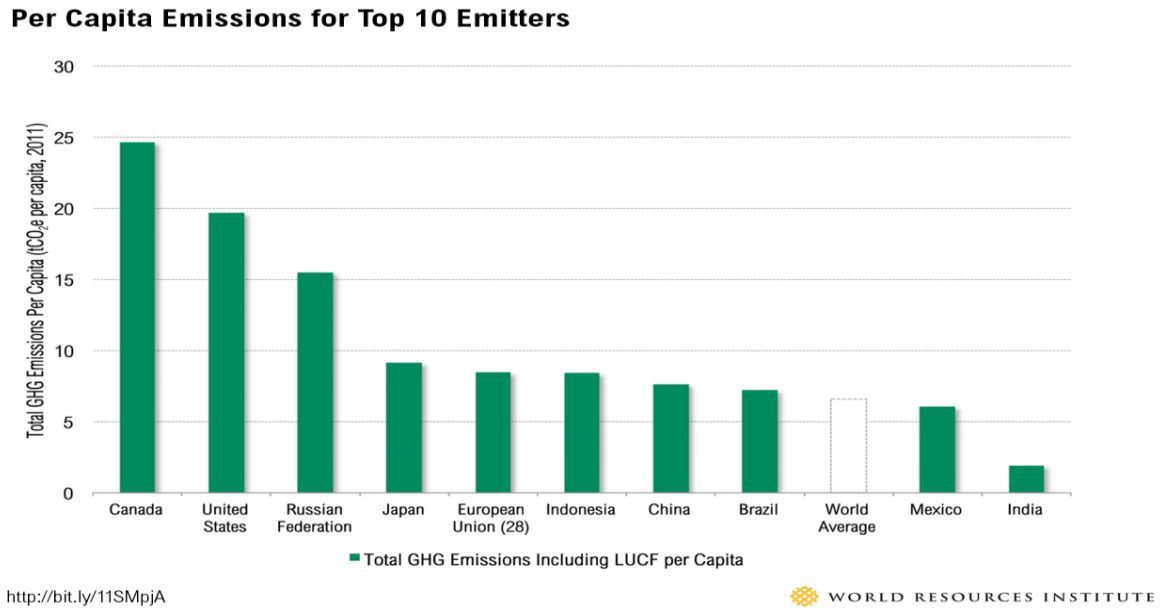
Building on the outcomes of the previous forums, the Vienna Energy Forum (VEF 2017) took place from the 9 – 12 May 2017 in Vienna. The VEF 2017 focused on sustainable energy for the implementation of the SDGs and the Paris Agreement. The Forum also provided a platform for a rich dialogue on key issues of the energy debate and in finding ways to strengthen the means of implementation (VEF, 2017).

Upon the conclusion of VEF 2017 on the 12 May 2017, the resolutions of the forum were based on ten key messages that highlight the catalytic role of energy for the successful implementation of the Sustainable Development Goals (SDGs) and the Paris Agreement on climate, namely:

1. Focused on the long-term integrated strategies to cover all SDG's.
2. Focused on the urgency of the implementation phase of the SDGs and the Paris Agreement and the need for a holistic approach, which mitigates the trade-offs while positively enhancing the numerous interlinkages between these sectors.
3. Focused on the solutions such as innovative infrastructure that uses renewable energy in an efficient way to cope with the rising demand of energy without detrimental impact on the climate and the environment.
4. Focused on the issue of clean and affordable energy in order to mitigate and adapt to climate change towards achieving the objective of the Paris Agreement.
5. Focused on technological innovations in meeting the sustainable energy development and solving the issue of climate change.
6. Focused on the collaboration and partnerships between public and private sector in finding financial solutions for the accomplishment of the MDG7 and Paris Agreement.
7. Focused on developing the energy system that is based on the integrated network rather than a top down approach.
8. Recognised that innovation works at multiple levels, and that it can trigger fast and transformative change, target setting and regional cooperation can further ensure that results of innovation trickle down through all levels.
9. Focused on energy as a crucial component for the implementation of the 2030 Agenda and the Paris Agreement, but also for meeting the energy security needs of various countries. Therefore, elements of trust, confidence and transparency are essential enablers for the means of implementation.
10. Focused on the design of policy that should incorporate the needs of small and medium enterprises in developing countries. This can be done alongside the creation of frameworks, which enable new entrepreneurs to

create quality, and cost-effective solutions, which can address energy, and sustainability demands simultaneously.

**Figure 2.4: World's Top Ten Emitters**




Source: World Resources Institute (2011)

Regrettably, one of the leading role players and the second biggest carbon emitters in the world (Energy Information Agency, 2011) as shown in the above Figure 2.4, the United States of America just pulled out of the Paris Agreement citing among other reasons that complying with the accord could "cost America as much as 2.7 million lost jobs by 2025, according to the National Economic Research Associates" (2017). The remaining countries will just have to continue striving for the attainment of both the SDG's and the Paris Agreement objective without the full co-operation of the United States.

### 2.5.3. The theory of poverty

As already mentioned in Chapter 1, that energy is the lifeblood of development in any society, it would also be disingenuous to mention energy poverty without looking at poverty holistically.

Sameti, Esfahani and Haghighi (2012:45) suggest that the problems encountered when defining and measuring poverty had often led poverty researchers and policy makers associating poverty to the concepts of impoverishment, deprivation, the disadvantaged, inequality, the underprivileged and the needy. Over the years, government welfare policy to reduce poverty was influenced by differing perspectives (ibid).

Rank (2004:15) noted that it is important to broaden our perspectives on the reasons for poverty in order to understand its real causes. According to Rank, our understanding of the causes of poverty could be grouped under three major factors, namely: individual factors, cultural and neighbourhood factors, and structural factors.

### (i) Individual factors

The individual factors that are responsible for poverty include individual attitude, human capital and welfare participation. The belief in individualism places a great deal of emphasis on individual industriousness and responsibility to procure basic needs including food, shelter and health care services (Rank, 2004:17). Rank refers to the United States and the fact that it is seen as the land of opportunity, where individuals are provided with vast opportunities to achieve the American dream of material prospect and success. The premise of the American dream stresses that talent, virtue and hard work can lead to success and that individual poverty is an individual failing due to lack of motivation. Work and marriage disincentives and dependence on government have been attributed to welfare programmes that refer to the range of services that are provided to protect people in certain conditions that may include child poverty, sickness, and old age. In the United States, welfare refers to financial assistance to the poor.

### (ii) Cultural and neighbourhood factors

“The concepts of culture of poverty and social isolation provide frameworks that explain how poverty is created and maintained in some neighbourhoods or among some groups. The cultural and neighbourhood factors relate to the influence of people’s residential environment that tends to shape poverty or success” (Sameti *et al*., 2012:47).

According to Mandell and Schram (2003:48), Oscar Lewis first coined the term culture of poverty when he researched poverty in Mexico and Puerto Rico in 1961 and 1966. The theory of culture of poverty is built on the premise that both the poor and the rich have different patterns of values, beliefs, and behavioural norms. This theory argues that the poor become poor because they learn certain psychological behaviours associated with poverty. Lewis mentions that the poor learn not to study hard, not to plan the future, to have unprotected sex, and to spend money unwisely.

**(iii) Structural factors**

Larger economic and social structures have been found to account for poverty. Perspectives regarding structural factors argue that capitalism creates conditions that promote poverty.

Specifically, the Davis and Moores' functionalist theory, labour market theories, and the social exclusion perspective threw more light on the structural causes of poverty.

Then, there was Marx (1975) who concluded that the surge in industrialisation has led to a significant economic vulnerability of labours in the capitalist system. Marx utilised the concept of exploitation to explain the fundamental cause of poverty among workers during the Industrial Revolution. "The concepts of exploitation and social exclusion are two phases of work-related experience used to explain the primary causes of poverty in industrialised countries. While the concept of exploitation was used during the Industrial Revolution, the theory of social exclusion replaced exploitation as the principal cause of poverty during the past few decades in the industrialised nations". Bessis (1995:61) pointed out that "the practice and experience of exploitation interacts with social exclusion to promote poverty". According to Bessis, the concept of social exclusion is alienation or marginalisation of a certain group within a society, where the majority of the population has substantial economic, political, or social opportunities.

### 1.5.3.1. The theory of poverty in the South African context

The theory of social exclusion relates more with the South African current political discourse with the new buzzwords such as *Radical Economic Transformation* and *Inclusive Growth*. At the ANC's 53rd National Conference held in Mangaung, Free State Province in 2012 it was resolved that: *"We are boldly entering the second phase*

*of the transition from apartheid colonialism to a national democratic society. This phase will be characterised by decisive action to effect economic transformation and democratic consolidation, critical both to improve the quality of life of all South Africans and to promote nation-building and social cohesion*."

In the ANC's 5th National Policy Document, they affirm that in the current phase of our struggle, the ANC is committed to accelerating and consolidating the processes of economic transformation to ensure that they are able to more effectively touch the lives of those millions of mainly black South Africans who have not yet experienced the betterment of life which held such promise at the dawn of our freedom in 1994.

The statement is referring to economic transformation in order to cater for those who have mainly been excluded in the country's mainstream economic activities since the dawn of democratic South Africa. Within the context of this study, the theory of social exclusion refers to those sectors of our population that have been identified (or still need to be identified) as qualifying for Municipal Free Basic Services.

### 2.5.4. Social policy applicable to this study

In light of the preceding analysis, it is important to highlight that this study is framed upon a domain of thought and behaviour of social policy. According to Kennett (2006:72), the term social policy in academic discourse, tends to be confined to the publicly provided, or regulated, core programmes such as income maintenance (or social security), housing, health and social services. Yet beyond these generally accepted central areas, there is a range of other public policies that might legitimately be included in the definition given that they are aimed at securing or enhancing the well - being and the life chances of individuals.

Mkandawire (2004:1) defines social policy as, "collective interventions directly affecting transformation in social welfare, social institutions and social relations. Social welfare encompasses access to adequate and secure livelihoods and income. Social relations range from the micro to the global levels, encompassing intra-household relations of class, community, ethnicity, gender, etc."

Hall and Midgley (2004:4) refer to applied social policy as being considered synonymous with government intervention to provide social services. Comprehensive and systematic public social policy provision came to the fore in the European post-war conception of the 'welfare state', in which government was perceived as having a duty to ensure certain fundamental living standards for all its citizens, literally 'from the cradle to the grave'.

Hall and Midgley (2004:24-26) describe the different types of theories that characterise social policy, namely: representational theory, explanatory or analytical theory and normative theories.

According to Hall and Midgely (2004:27) normative theories are used to provide a value framework for social policy. They help to identify desirable social policies in terms of different sets values, ideologies and political objectives. These theories also influence the social policy decisions of political parties, governments, non-governmental organisations (NGO's), popular social movements and official international bodies. The literary narrative also asserts that by shaping these institutions, the normative theory creates a strong commitment to common values and beliefs, and a high sense of opposition to any social policy that appear to contradict its deeply felt views (ibid).

The question of addressing access to basic services as a way of mitigating poverty, which is within the context of this study, can be addressed within the normative social policy framework. Based on the nature of the policy that is being examined (FBE) and whether it contributes to the reduction of energy poverty, and the impact it makes on poverty in all its manifestations.

There are different actors involved in the implementation of FBE, such as all spheres of government, governing political party, NERSA, Eskom and the communities at large, normative social policy theories influence all major policy decisions taken by these social actors.

### 2.6. A South African perspective on energy poverty

After looking at poverty holistically, it is vital for contextual sake of this study to look at the South African perspective on energy poverty. The South African government is of the opinion that general poverty is compounded by energy poverty and is responsible

for an erosion of health and education outcomes (DME, 1998:9). The country has made progress in alleviating energy poverty because it is a policy focus. This is evidenced in the Medium Term Strategic Framework (MTSF, 2009), which states that the government aims to, “include, amongst others, diversification of the energy mix in pursuit of renewable energy alternatives and the promotion of energy efficiency”.

The National Planning Commission (2012) on its National Development Plan (NDP) 2030 document in the chapter on economic infrastructure focuses on electricity, even though energy infrastructure should not only be limited to electrification. “Universal access to modern energy services is key to many of the plan’s objectives, including growing the economy, improving quality of life, reducing poverty, ensuring the health and safety of all citizens, and the provision of adequate services and infrastructure. As a development plan that seeks to identify the key challenges hampering development and the achievement of the vision for South Africa by 2030, access to modern energy services by poor households is a key issue that South Africa needs to address. Access to modern energy services by poor households underlies many of the objectives of the NDP including poverty reduction and improved quality of life, the health and safety of all citizens, the delivery of adequate services and infrastructure, as well as overall economic development for the country”. Putting emphasis only on access to electricity as opposed to the universal access to energy services and a wide range of fuels and technologies in order to meet the needs of the poor contradicts the National Energy Act (No. 34 of 2008) which states the following:

“To ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account environmental management requirements and interactions amongst economic sectors; to provide for energy planning, increased generation and consumption of renewable energies, contingency energy supply, holding of strategic energy feed stocks and carriers, adequate investment in, appropriate upkeep and access to energy infrastructure; to provide measures for the furnishing of certain data and information regarding energy demand, supply and generation; to establish an institution to be responsible for promotion of efficient generation and consumption of energy and energy research; and to provide for all matters connected therewith” (DoE, 2008:2).

According to Kohler *et al*., (2009:4) energy poverty is best viewed as a diverse set of symptoms rather than a singularly defined issue. The cause of energy poverty varies by region but the effects of zero electricity are common to all. Unfortunately, electricity is only one part of the problem. Access to efficient and affordable cooking and heating fuels, like liquefied petroleum gas (LPG) or kerosene, are equally if not more vital to alleviating the effects of energy poverty. Broadly defined, energy poverty, is viewed as the lack of access to modern energy services — be it electricity, heating or cooking fuels — necessary for human development. Unfortunately, there is a lack of consensus internationally on what the term 'energy access' means.

Lloyd (2014:2) makes an assertion that the poor rural dwellers can still utilise biomass, which is freely available, although, in places where demand for this fuel has grown because of population growth, it can start to take on a cash value. Whilst it is generally free, collecting the fuel is more time consuming and labour intensive than many realize. According to (Statistics SA, 2008) studies in rural KwaZulu-Natal revealed that harvesting of fuel wood started as early as 02h00 and finished as late as 23h00.

In winter, wood consumption doubled and averaged about 600kg/month although some households got by with about 300kg/month.

DoE (2009:46) suggests that the literary narrative on the energy use patterns in South Africa over the last two decades has revealed consistently that poor households tend to rely for their energy needs on multiple energy sources, and this applies to both electrified and non-electrified households. This provides a strong empirical challenge to prevailing energy transition theories and the 'energy ladder' model, which presuppose a one-directional progression from traditional to modern energy sources and appliances once households receive an electrical connection.

### 2.6.1. Harmonious approach in addressing energy poverty

Swart from Paraffin Safety Association of Southern Africa (PASASA) and Bredenkamp from South African National Energy Development Institute (SANEDI) in their paper that was presented at the "Towards Carnegie III" conference held at the University of Cape Town in 2012 made some proposals in response to a government's pledge to minimise inequalities and eradicate poverty by 2030, namely:

- Implement an innovative and integrated household energy strategy and policy that takes into account that South Africa comprises a population of diverse ethnicities and economic backgrounds. This can assist in eradicating energy poverty by improving affordability, reducing the strain on the national electricity grid, addressing the impacts of climate change, improving safety and most importantly, creating much needed jobs in the South African economy.
- "Systemic administrative issues in the distribution and use of energy in the household have exacerbated the problem". Flammable and toxic materials are often not stored safely or out of reach of infants in low-income houses and informal settlements. "Furthermore, paraffin appliances and fuel are generally sold informally through micro-enterprises and spaza shops where the paraffin is hazardously sold in beverage containers. There is a lack of options for affordable, legal appliances". Currently only two South African Bureau of Standards approved stoves exist in South Africa. This lack of options for cost effective, safe cooking appliances has resulted in a situation where the majority of poor households use cheap, illegal and unsafe stoves. "Having national standards and regulations for paraffin-fuelled appliances has evidently not translated into increased safety within households".
- "A household energy safety policy must encourage competition and innovation in the local manufacturing of paraffin appliances, which will ultimately prevent the use of illegal and unsafe appliances". Government could promote and subsidise the development of relevant technology to manufacture approved, safe paraffin appliances. This initiative would make safer appliances more affordable to the indigent household and create more jobs thus helping to reduce unemployment. "These initiatives can be complemented by financing mechanisms which should be made available to assist poor households to buy safe, energy efficient and compliant appliances. It is crucial that unsafe products, especially appliances, no longer reach the South African market. "To achieve this, the National Regulator for Compulsory Specifications needs sufficient funding to increase their capacity to enforce the existing regulations". Safer appliances will reduce injuries and fatalities; and will undoubtedly impact positively on climate-change and ease pressure on the national electricity grid by reducing the demand for electricity,

- Energy efficiency and safety must be taken into account when constructing low cost houses. “Addressing the right to shelter through the construction and planning of houses and communities has been done with little or no consideration for the requirement of households for safe, efficient and affordable energy consumption. Although solar energy initiatives are exciting, hot water is low on the list of household energy priorities of low-income households. The housing plans for low-income housing have poor thermal efficiency and no provision for energy consumption (ventilation, counters, space, light and insulation). As a requirement of the household energy safety strategy, the Department of Human Settlements and other relevant agencies must work together to develop low-cost homes that are safer and more energy efficient, particularly in informal settlements where there is exponential growth”.

### 2.6.2. Measuring energy poverty

Several authors have been able to theoretically provide a definition for energy poverty but practically fail to agree on a threshold poverty line. Ismail (2015:6) outlines the numerous approaches that are used to measure energy poverty, namely:

- **The income approach**: is defined based on the proportion of income that a household utilises to acquire basic energy to fulfil their needs (Fahmy, 2011:9). The portion of income that is spent by the indigent households greater than those in the higher income bracket.
- **The self-reported approach**: is determined by a household’s equitable distribution of their income spent on their energy needs and other expenses. (Fahmy, 2011:11).
- **The objective approach**: is usually used by the government. It is measured by determining the proportion of household’s income that needs to be spent on energy. A household is deemed energy poor by the government if more than one tenth of its income is spent on energy (Waddams *et al*., 2007:15) or the government can depend on professional assessments to determine people’s energy needs based on external factors such as such as weather temperature and climate (Fahmy, 2011:12).

- **The access-adjusted approaches**: This approach considers accessibility of an energy source by households in specific areas (Kohler *et al*., 2009:8).
- **The expenditure approach**: The expenditure approach is considered the universal measure of energy poverty and is implemented by many countries because of its suitability.

  The average energy source of households is calculated at the expenditure poverty line based on household energy surveys (Barnes *et al*., 2010:38). Households whose energy expenditures exceed this threshold are deemed energy poor and have to choose between meeting their energy needs or investing in other goods and expenses. “This poverty expenditure line is generally estimated to be 10-15% of income. The expenditure approach has been adopted as the measure of energy poverty in South Africa” (DoE, 2013). “This is the equivalent of a middle-income household earning R10 000 a month and spending up to R1 000 - R1 500 a month on acquiring energy services” (Aitken, 2007:15).

## 2.7. Summary

The first part of this chapter starts by outlining and discussing the government programmes on electrification in the post-apartheid era in South Africa. It also presents the introduction of the White Paper on Energy Policy. It further provides an in-depth analysis on the introduction of FBE policy and the challenges that were encountered during its implementation. NERSA report is also consulted concerning the challenges that are still being faced in effective implementation of the FBE policy after almost fifteen years of its introduction, and their proposed mitigation and the progress report.

It goes on and discuss the conceptual framework of this study and it starts by defining the concept of sustainable development and its actors. Theory of poverty is also discussed by outlining three theories that influence the rate of poverty in a particular society, namely: (i) individual factor; (ii) cultural and neighbourhood factor; and (iii) structural factor. Moreover, by observing the country’s current political and structural scene, the researcher reached a conclusion that the South African poverty phenomenon is more aligned with the structural factors.

Lastly, the chapter looks at the social policy underpinning this study. Then a brief overview on South African perspective on energy poverty is looked at, firstly by looking at the government's approach in tackling poverty, energy poverty and inequality towards achieving its NDP 2030 target goals. Approaches on how to measure energy poverty concludes the literature review; the following chapter presents the research methodology employed by the researcher, including a detailed presentation of the study area, tools and approaches utilised for the conduct of this research.

# CHAPTER 3

# RESEARCH METHODOLOGY

## 3.1. Introduction

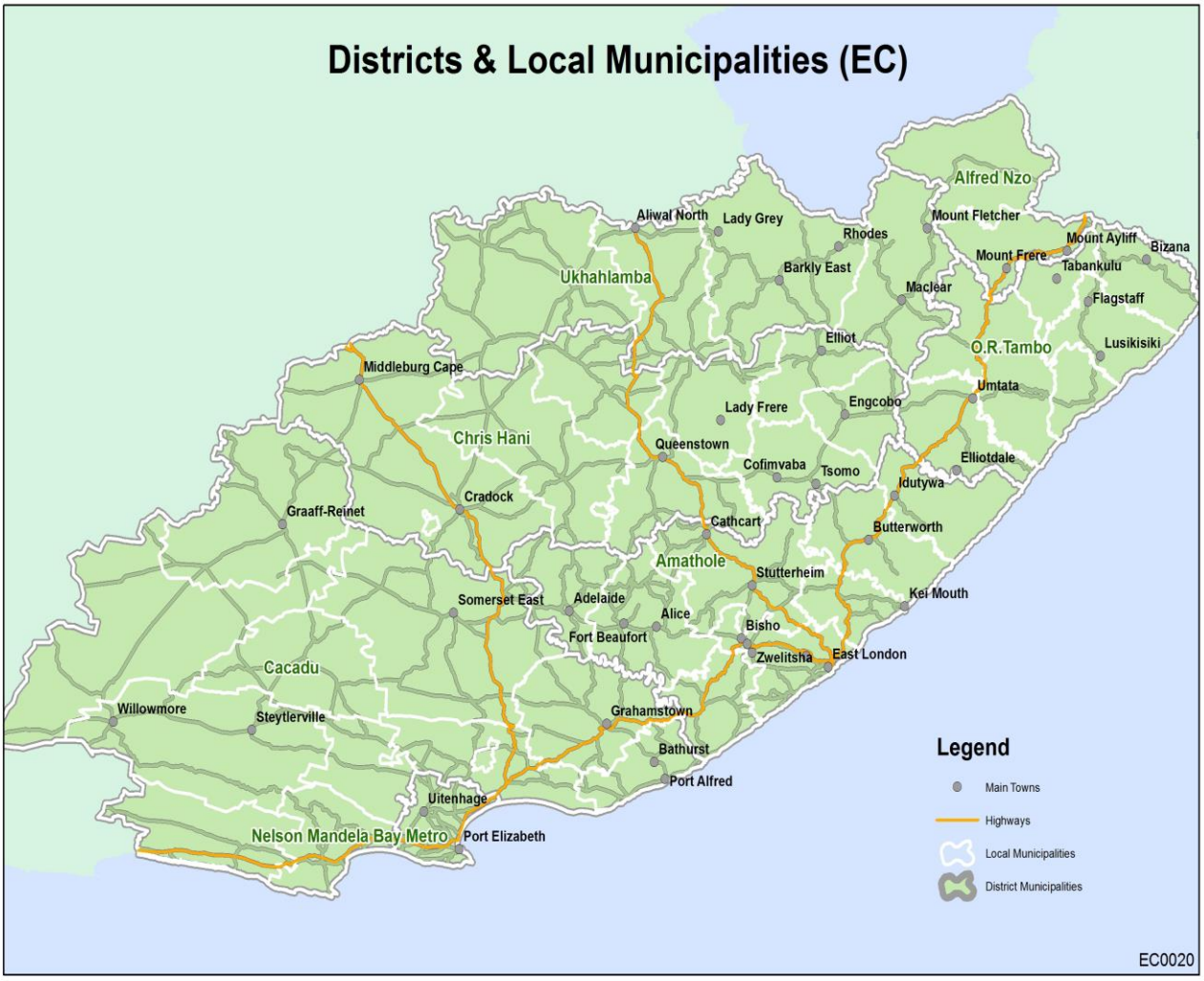
This chapter presents the methodology and tools that are used to collect and analyse data for this study. It begins by presenting the detailed study area, the research population, the research design, the research method, the sampling method used, the sampling size and the data collection tools.

Lastly, the chapter deals with ethics and outlines the ethical considerations for the study. The data collected is intended to answer the questions of the study and fulfil the aims and objectives of the study, which will further be discussed in Chapter 4.

## 3.2. Description of the study area

This study is carried out within the Eastern Pondoland area, which is situated on the top right as shown in Figure 3.1 below, the area, consists of four towns, namely: Lusikisiki, Flagstaff, Bizana and Tabankulu. Pondoland is the ancestral home of the Xhosa speaking, Pondo people. Pondoland area is situated on the South African coast of the Indian Ocean, in the Eastern Cape Province and it is an undeveloped rural area, with limited infrastructure. Rudimentary gravel roads connect the communities, causing travel difficulties especially during rainy seasons, which result in many communities becoming inaccessible. The boundaries of Pondoland are the Mtamvuna River in the north, which also borders the Eastern Cape Province from KwaZulu-Natal Province and the Mthatha River at the south. Therefore, Pondoland lies between the Mthatha River and the Mtamvuna River in the north along a coastal strip that is at a maximum 50 kilometres wide. The area is officially known as the Wild Coast as it is surrounded by mountains whose main vegetation consists of thorn veld, grassland, as well as subtropical evergreen forests in the wet coastal valleys. The Mzimvubu River divides the area into West Pondoland and East Pondoland and for the purposes of this study; it is only the eastern part of the area that was being looked at.

**Figure 3.1: Map showing Eastern Cape (EC) municipalities and the study area**




Source: Eastern Cape Socio Economic Consultative Council - information centre

Eastern Pondoland consists of three local municipalities, namely: Ingquza Hill Local Municipality (Lusikisiki and Flagstaff), Ntabankulu Local Municipality (Tabankulu) and Mbizana Local Municipality (Bizana).

Ingquza Hill Local Municipality consists of thirty-one (31) wards with an estimated population of 278,481 with 99.2% predominately made up by Black Africans and a population density of 110 persons per square kilometre (Census, 2011).

Ntabankulu Local Municipality consists of eighteen (18) wards with an estimated population of 123,976 with 99.4% predominately made up by Black Africans and a population density of 90 persons per square kilometre (ibid).

Mbizana Local Municipality consists of thirty-one (31) wards with an estimated population of 281,905 with 99.6% made up by Black Africans and a population density of 120 persons per square kilometre making it the most populated municipality in the area (ibid).

### 3.3. Economic profile of the study area

According to Municipal Structures Act 117 of 1998, these three municipalities are classified under Category B municipalities, which means that they fall into areas that are primarily rural without any extensive development and there are no complex and diverse economic activities happening in those areas (DPLG, 1998). This section also highlights the plight of the people living in this area, such as the scourge of poverty which in turn make them lack the capabilities to transform opportunities provided by an enabling environment (access to electricity, infrastructure) to sustainably enhance the living standards in order to play their role in economic space and meet their social and cultural obligations.

**(i) Ingquza Hill Local Municipality (IHLM)**

Ingquza Hill is located a great distance away from the business district of the Eastern Cape. A provincial road (R61) which links Durban traverses it to Port St Johns, which creates certain potential in terms of future economic development. There is also a proposed national toll road (N2) that will traverse the municipality along the coast with the potential to improve economic activity, transport and mobility in the area. Flagstaff and Lusikisiki, two towns in the area fulfil the economic and residential needs of the inhabitants of Ingquza Hill municipality. The remainder of the area is predominantly rural in nature.

According to IHLM (2016), this municipality is the second highest contributor to the O.R. Tambo District Municipality's Gross Geographic Product (GGP), after King Sabata Dalindyebo Local Municipality. Its contribution totals about 9.4% GGP. "The government sector makes a significant contribution to the GGP of the municipality with a total contribution of 56 %, followed by wholesale (8.7%), retail (7.8%) and agriculture & hunting at (7.4%). The remaining sectors have a contribution of less than 5%, each that hampers

the economic growth of the area. Ironically it is the sectors that are making the smallest contribution that have the highest potential to improve the local economy".

The O.R. Tambo District, under which IHLM falls, has an unemployment rate of 77%. The unemployment rate of Flagstaff and Lusikisiki is at an average of 66% (IHLM, 2016). Exorbitant unemployment rates impact poorly on municipalities as low levels of income is directly responsible for poor payment rate for services. Community services sector followed by household and agriculture sectors dominate the labour market. These dominant sectors do not guarantee job security and a living wage. "Primary growth sectors which should ideally be the highest contributors to economic development like manufacturing, transport, trade and financial services are yielding relatively very low contribution towards job creation. The result of this is that Ingquza Hill is characterised by a narrow economic base, which contributes to the high levels of unemployment and poverty". Capital injection and new investments in the primary growth of sectors like agriculture, manufacturing, transport and trade will be able to stabilise the unemployment rate.

**(ii) Ntabankulu Local Municipality (NLM)**

'Ntabankulu' is an IsiXhosa word meaning 'big mountain', which reflects the mountainous nature of the municipal area.

According to NLM (2016) there are Local Economic Development (LED) programmes that are aimed at reviving the economic base of the town Tabankulu (through SMME facilitation), develop agricultural potential (especially in livestock), encourage rural development and expand upon tourism opportunities.

Integrated Spatial Development Framework Plans and Integrated Poverty Reduction and Gender Equality Programmes have also been initiated to attempt to stimulate growth. A skills development plan is seen as essential, where the vast majority is identified as unskilled or in possession of elementary skills. This situation is further exacerbated by the area being situated a great distance away from the economic centre of the municipality.

On Quality of Life, Ntabankulu scores well below the provincial average across all measures except for housing and education. Access to schools exceeds the District average and is comparable to the Eastern Cape average. The provision of essential basic services (water, electricity, sanitation, and refuse removal) is inadequate, and access to medical care facilities is minimal. Economic infrastructure is similarly below the provincial average, and is poorly represented in respect of business support institutions and claims only three post offices, with banking capability.

The Municipality claims the highest percentage population living in poverty (91.81%) in the Eastern Cape, coupled with the highest rate of unemployment (84.89%). A slightly higher share of the provincial poverty gap (2.72%) than of population (2.01%) is found for the area, while 39.15% of households live on up to R1000 per month and an average of 26.91% of total expenditure is on food.

The Municipality has a very low productivity score owing to poor growth in value creation relative to employment and labour remuneration, low Gross Domestic Product (GDP) per worker (formal and informal) and a shortage of skills available to the economy.

Ntabankulu reflects the lowest Economic Absorption Capacity in the District, considering total disposable income and buying power and the negative income expenditure balance. However, the local informal sector has the highest capacity to generate economic activity relative to formal employment. In spite of its poor performance, the local economy claims a comparative advantage in Agriculture, Construction and Trade, in terms of GDP contribution, an employment advantage in Households (19.66%), as well as an advantage in Community Services, for both employment and GDP contribution. Education dominates Community Services, accounting for 30.87% Gross Value Added (GVA) and 38.42% employment.

**(iii) Mbizana Local Municipality (MLM)**

MLM comprises a small town and surrounding villages situated in the Eastern Cape Province on the R61 road connecting KwaZulu-Natal South Coastal Boundary to the N2 highway. According to the municipality's IDP

(2012-2017) document, the majority of households in Mbizana are of a rural nature. Approximately 95% of the population resides in the surrounding villages, with the rest living in the urban area. This results in natural resources proving a strong base for basic survival as those living in rural areas turn to subsistence farming for their livelihoods.

Unemployment is a crisis throughout South Africa, and Mbizana remains affected as a large portion of the population is still struggling to secure formal employment.

However, the employment profile of Mbizana Local Municipality shows that unemployment rate declined between 2001 and 2011. In 2001, unemployment was 73.5%, which dropped to 44% in 2011. This indicates that Mbizana has made significant strides in creating new job opportunities. The municipality is making strides in job creation programmes, with 1000 jobs created through the Community Work Program (CWP). Ten wards participated in the CWP employing an average of 100 people per ward. A need for the implementation of a Municipal Capacity Building Intervention to ensure improvement of skills and knowledge of communities was also proposed by the LED Strategy.

Reconstruction of the R61 access road, leading into the area from Port Edward and Magusheni, which is currently underway is expected to improve travel times and other business opportunities in the local municipality. This will also assist the municipality to support the provision of Sustainable Rural Local Economic Development.

### 3.4. Research paradigm

Denzin and Lincoln (2011:33), describes the research paradigm as a set of guidelines that the researcher has to adhere to as the research progresses. All research should begin with the research questions, aims and objectives followed by the adoption of the appropriate research paradigm. Morris (2006:25) also contends that consequences of the omission of the research paradigm may result in the researcher discovering that the view of what constitutes valuable knowledge for a given research topic would not be measured in a meaningful way. It is important to adopt the appropriate paradigm that will be compatible with the methodology chosen. All research paradigms should

comprise the following components: ontology, epistemology and methodology (Denzin & Lincoln, 2005:37).

Denzin and Lincoln (2005:37) as “the image which the researcher obtains about social reality” more precisely describe the ontological aspect of a paradigm. The ontology indicates the assumptions that the researcher makes about reality. Blaikie (2000:73) also defines the ontology of a paradigm as the assumptions that are made about the nature of a social reality and what constitutes the social reality.

According to Blaikie (2003:75), the epistemology of a paradigm refers to “how the theory of knowledge is built in social reality”. Epistemology of a paradigm emphasises how knowledge is gathered and how to be clearly understood. It also focuses on the validity and methods used to gain knowledge about social reality.

According to Blaikie (2003:77), the methodological aspect of a paradigm refers to “the most appropriate way of gathering knowledge of a social reality”. In the methodological aspect of a paradigm, it is imperative that guidelines are constructed to ensure that the research that is undertaken is authentic and systematically addresses the research questions in line with the research questions, aims and objectives.

### 3.4.1. The Positivist paradigm

According to O’Leary (2004:112), the positivist paradigm refers to the scientific method or investigation, which aims to assess the validity of a theory or describe an experience through observation and measurement. Schunk (2008:11) similarly states, “knowledge from a positivist paradigm should be measurable, objective, value free and universally applicable. Schunk (2008:11) further suggests that the positivist paradigm supports the ontological assumption social reality is made up only of realities and the epistemological side of this paradigm is the possibility of being unbiased when observing these realities. Therefore, the correlation in the field of education should be precisely figured as they can be figured in natural science.

Methodologically, the positivist paradigm is closely associated with quantitative methods of data collection and analysis (Mackenzie and Knipe, 2006:61). The positivist paradigm can utilise qualitative methods but the quantitative method is used predominantly. Mackenzie and Knipe (2006:61) also states that this paradigm utilises

four examples of data collection tools, namely: experiments, quasi-experiments, tests and scales.

### 3.4.2. Interpretivist paradigm

According to Blaikie (2000:79), the “interpretivist paradigm indicates that the research is value-bound and impossible to differentiate between causes and effects”. Mackenzie and Knipe (2006:62) also suggest that in this paradigm, both knowledge and the researcher cannot be separated since the researcher is the only source of the reality. Moreover, Creswell (2013) states that “the researcher in the interpretivist paradigm depends upon the participants’ point of view of the case being investigated".

According to Mackenzie and Knipe (2006:63), the qualitative method of data collection and analysis is predominant although combination of both qualitative and quantitative methods of data collection is also possible in this paradigm. Although a combination of quantitative and qualitative methodologies is possible, mixed methods can be utilised to support a wider description on qualitative data collection methodology. Mackenzie and Knipe (2006:63) also lists interviews, observation, document reviews and visual data analysis as the four examples of data collection tools utilised in the interpretivist paradigm.

### 3.4.3. The Critical paradigm

The critical paradigm is considered as a response to both the interpretivist and positivist paradigm. Davis *et al*., (1945) suggest that it attempts to overcome the reduction of the positivist and the conservatism of the interpretivist. The ideology self-reflection is explicitly introduced in the critical paradigm in terms of knowledge processing. Morris (2006) states that “this paradigm applies the same epistemological and ontological assumptions as the interpretive paradigm but differs in terms of its methodology”. He further suggests that the researcher in the critical paradigm should critique the subject of a particular study from an experienced perspective. This means for example if a person is using an innovation, this person’s perspective towards the innovation should not be neglected in terms of criticism. He indicates that knowledge in this paradigm is a shared aspect between all of the research members.

### 3.4.4. Philosophical perspectives adopted by this study

Researchers base their work on certain philosophical perspectives, it may be based on a single or more paradigms, depending on the kind of work they are doing. This study sought to uncover the FBE contribution in reducing energy poverty as well as its impact on overall poverty in the study area. In light of the above discussions on different paradigms and for the sake of the nature of this study and what it sought to uncover as well as the methods used to analyse the data, the philosophical assumptions underpinning it come from positivist perspective.

## 3.5. Research design

Yin (2003:23) asserts that “colloquially a research design is an action plan for getting from here to there, where ‘here’ may be defined as the initial set of questions to be answered and ‘there’ is some set of (conclusions) answers”. Mouton (1996:44) also posits that the research design serves to "plan, structure and execute" the research to maximise the "validity of the findings".

Simply put, the research design can be thought of as the logic or the master plan that ought to be followed by the researcher throughout the research process in order to achieve desired results. The research design can be seen as actualisation of logic in a set of procedures that optimises the validity of data for a given research problem. It gives directions from the underlying philosophical assumptions to research design, and data collection.

This study employed a descriptive and analytical case study approach, it used a mixed methods approach combining qualitative and quantitative methods for data collection by using standardised questionnaires for households, and open-ended interview schedules for officials in order prompt more discussions.

Although positivism philosophy is more aligned with quantitative data collection methods and analysis, a combination of both qualitative and quantitative methods can also be used.

Kafle (2013:196), states that both quantitative and qualitative data can be utilised to support or expand and deepen the description. This study sought to uncover as to 'how' people benefit from the provision of the FBE programme and other aspects including the underlying factors and concerning those that are yet to feel the effects of the programme, as to 'why' that is still the case. Therefore, the case study approach was deemed an appropriate research strategy for this study.

### 3.5.1. Case study research

As mentioned in the preceding section that the research design for this study is a descriptive and analytical case study within a positivism philosophical perspective that is analysed largely through quantitative methods with a small qualitative component. Yin (2003:23) defines "a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly defined. The case study approach is especially useful in situations where contextual conditions of the event being studied are critical and where the researcher has no control over the events as they unfold".

According to Yin (2003:24) a case study design should be considered when: (a) the focus of the study is to answer 'how' and 'why' questions; (b) you cannot manipulate the behaviour of those involved in the study; (c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study; or (d) the boundaries are not clear between the phenomenon and context. He further states that the case study approach makes use of multiple methods of data collection such as interviews, document reviews, archival records, and direct and participant observations and subsequently 'thick descriptions' of the phenomena under study.

## 3.6. Target population

Neuman (2006:224) refers to the target population as the specific pool of cases, which the researcher wants to study. These cases may differ ranging from persons, towns, documents and animals to a pool of other cases. In the context of this study, these cases refer to households that are benefitting and to those that do not benefit from the provision of FBE subsidy within the Mbizana, Ingquza Hill and Ntabankulu local

municipalities. As previously mentioned in sections 3.2 and 3.3 respectively, that these three municipalities are located within the Eastern Pondoland area and the scourge of poverty is rife in this area.

### 3.7. The sampling method and size

Onwuegbuzie and Collins (2007:281) citing 'The American Heritage College Dictionary' (1993) refers to sampling as the process of selecting "a portion, piece, or segment that is representative of a whole". Sampling is an important step in the research process because it helps to inform the quality of inferences made by the researcher that stem from the underlying findings.

They further assert that non-probability sampling is when the goal of the researcher is not to generalise to a population but to obtain insights into a phenomenon, individuals, or events, and then the researcher purposefully selects individuals, groups, and settings for this phase that maximises understanding of the underlying phenomenon.

Therefore, this study employed a non-probability sampling technique to select the representative of the population. A total number of thirty households from each municipality regardless of the village was selected from Eskom database (provided by the Eskom Service Representative). The selected households represented FBE beneficiaries, non-beneficiaries and intended beneficiaries. The sample was scattered as some households even volunteered to represent and some could not be rejected during the data collection process. An official responsible for Free Basic Services from each municipality, a ward councillor, Eskom representative and a CoGTA representative were also identified as key actors in this study.

Determining the sample size is about deciding on the number of elements to be sampled for observation. Generally, determination of a sample size has tended to be dichotomised, with small samples being associated with qualitative research and large samples being linked to quantitative research.

As Onwuegbuzie and Collins (2007:282) suggest that determining the sample size is therefore flexible as it depends on the research objective, research question(s), and the research design.

As already mentioned above, this study used a sample size of ninety (90) households to collect quantitative and qualitative data. This sample size was mainly justified by time and budgetary constraints. In addition, the study also conducted interviews with five officials and three ward councillors from each municipality.

### 3.8. Data collection instruments

Data collection methods include tests, questionnaires, interviews, classroom observations, diaries and journals, (Zohrabi (2013:254). Quantitative designs frequently utilise tests and closed-ended questionnaires to collect, analyse and interpret the data while qualitative methods prefer to utilise of interviews, diaries, journals, classroom observations and open-ended questionnaires to collect, analyse and interpret the data. Alternatively, mixed method approaches utilise closed-ended questionnaires (numerical data), interviews and classroom observations (text data) to collect information. Researchers can obtain information using different methods in order to triangulate the data and to heighten the dependability and trustworthiness of the data and their interpretation.

The main instruments used in the mixed method researches consist of closed-ended, open-ended questionnaires as well as interview schedules. These different ways of gathering information can supplement each other and hence boost the validity and dependability of the data. Therefore, data collection for this study was done using two types of questionnaires, namely the household survey questionnaire and the interview guide with municipal officials, CoGTA and Eskom officials. All the questionnaires were designed for a face-to-face interview with the respondents. The household survey questionnaires include both open-ended and closed-ended questions, while the other questionnaires are interview guides, meant to generate discussions, through open-ended questions. The household survey questionnaire structure is divided into three sections, namely:

- Demographic characteristics
- Access to electricity and the household usage
- FBE and its impact (for electrified households)

The household survey questionnaires were administered to households by the main researchers and three research assistants in their local language (predominantly isiXhosa) and the main researcher did the interview guide with the officials. Samples of questionnaires are attached as Annexure One.

### 3.9. Recruitment of research assistants

Prior to going to the field, the principal researcher sought the assistance of three colleagues from Eskom. By virtue of their familiarity with the concept of FBE and its dynamics, the only training that was required was on ethics and interviewing techniques. The assistants also had to be made conversant of the research objectives, the problem statement, the research questions, the hypotheses, the focus, and individually assigned responsibilities. Assistants also had to be informed about the ethics of the research and be taught how to complete the questionnaires. Throughout the data collection period, the principal researcher monitored the progress and provided guidance when it was necessary to do so.

### 3.10. Data analysis

According to Neuman (2014:208), researchers who conduct qualitative studies analyse by organising data into categories based on themes, concepts, or similar features. While doing this, they may also develop new concepts, formulate conceptual definitions, and examine the relationships among concepts. Eventually, these researchers will link concepts to each other in terms of a sequence, as oppositional sets (*X* is the opposite of *Y*), or as sets of similar categories that are interwoven into theoretical statements.

However, before examining quantitative data to test hypotheses, it must be put in a specific form i.e. it must be coded. Data coding means systematically reorganising raw data into a format that is easy to analyse using statistics software on computers. As with coding in content analysis, researchers create and consistently apply rules for transferring information from one form to another. Most computer programs designed for numerical data analysis require that the data be in a grid format. In the grid, each

row represents a respondent, participant, or case. In computer terminology, these are called data records.

The data from the interviews will be analysed using the qualitative process of thematic and content analysis, as this method of data analysis is a more holistic and interpretive in approach.

The coded data in the questionnaire will be entered into a Statistical Programme for the Social Sciences (SPSS) version 24.0, software database for analysis. This involved the use of screening data techniques, and appropriate tabular and graphical means, aimed at measuring relationships and comparing assigned groups (Strewing and Stead, 2001). Chi-square tests will also be utilised to provide a statement of statistical significance of the Likert scale scoring patterns, and association or relationship between the variables.

Quantitative and qualitative data collected would be concurrently interpreted to strengthen the findings of the study or explain gaps observed (Creswell, 2003).

### 3.11. Validity

Zohrabi (2013:258) asserts that the “principles underlying naturalistic and/or qualitative research are based on the fact that validity is a matter of trustworthiness, utility and dependability that the evaluator and the different stakeholders place into it”. As Merriam (1998) states in qualitative research “reality is holistic, multidimensional and ever-changing.” Consequently, it is the responsibility of the researcher and research participants to build validity into the different phases of the research from data collection through to data analysis and interpretation. Validity ascertains whether one’s research is factually accurate and sincere and does, it is evaluating what it is supposed to do. In this regard, Burns (1999:88) stresses, “validity is an essential criterion for evaluating the quality and acceptability of research”. As a rule, researchers utilise various tools (questionnaires in this instance) to gather information relevant to the study. Therefore, it is important that these instruments are accurate and relevant as the researchers base their conclusions on the information they obtain using these instruments. Hence, it is imperative that the data and the instruments are validated.

The questionnaire is subjectively critiqued for presentation, accuracy and relevance of the questions. The researcher also sought assistance from fellow postgraduate students in verifying that the questionnaire was relevant, clear and unambiguous. In addition, the study supervisor was requested to comment on the schedule, and all suggestions were then incorporated into the questionnaire.

### 3.12. Reliability

One of the main requirements of any research process is the reliability of the data and findings. According to Nunan (1999:55), “in the main, reliability deals with the consistency, dependability and replicability of the results obtained from a piece of research”. In quantitative research, similar results are easily obtained because data is in numerical form. In contrast, achieving identical results in qualitative approaches are more complicated and challenging because data is in a narrative form and is subjective. To this end, Lincoln and Guba (1985:285) point out that the focus should be on establishing whether the findings and results are consistent and dependable based on the data collection processes rather than obtaining similar results. Merriam (1998) believes that “the human instrument can become more reliable through training and practice.” In general, Merriam (1998) suggests that the dependability of the results can be ensured using three techniques: the investigator’s position, triangulation and audit trial.

I. **The investigator’s position** - To clarify the different processes and phases of the inquiry to increase the reliability of the research, the researcher should elaborate on every aspect of the study. He/she should describe in detail the rationale of the study, design of the study and the subjects.
II. **Triangulation** - The researcher should employ different data collection tools, such as questionnaires, interviews and classroom observations, through different sources, such as learners, students, ex-students, language instructors, subject instructors and program staff. Therefore, collecting varied types of information through different sources can enhance the reliability of the data and the results. In this way, the replication of the study can be carried out easily.

III. **Audit trial** - This procedure, requires the researcher to describe in detail how the data is collected, how it is analysed, how different themes are derived and how the results are obtained. Therefore, this detailed information can help replicate the research and contribute to its reliability.

Based on the foregoing discussion on reliability, obtaining absolute reliability in a mixed research is challenging as human behaviour is not static, is highly contextual and changes continuously depending on various influencing factors. The quality of inferences also depends on the personal construction of meanings based on individual experience of the researcher and how skilled the researcher is at gathering the data and interpreting them. As a result of all these, reliability in the traditional sense is not practical in a mixed case study.

Merriam (1998) suggests that reliability in this type of research should be determined by whether the results are consistent with the data collected. This study have striven to ensure triangulation through the mixed methods in data collection, i.e. interviews and questionnaires which presented diverse viewpoints in order to cast some light on the problem presented by the study.

### 3.13. Ethical considerations

This being a mixed method study, the researcher has to interact closely and sensitively with participants, understanding their moral values, weaknesses and cultural orientations to collect data. Silverman (2000) reminds researchers to constantly bear in mind that while they are conducting their research, they are in reality entering the private spaces of their participants. Understandably, this raises several ethical issues that should be addressed during, and after the research had been conducted. Creswell (2013) states that the researcher has an obligation to respect the rights, needs, values and desires of the informants. He further states that throughout the research process, a researcher needs to engage in ethical practices. Practicing ethics is a complex matter that involves much more than merely following a set of static guidelines such as those from professional associations or conforming to guidelines from campus institutional review boards. Ethics has become a more pervasive idea stretching from the origins of a research study to its completion and distribution. Ethics should be a primary consideration rather than an afterthought, and it should be at the forefront of

the researcher's agenda (Hesse-Bieber and Leavy, 2006:83). Of all of the steps in the research process, it does tend to relate closely to the data collection, reporting, and distribution of reports than any of the other phase of research.

Scholars such as Traianou (2012:11), Reider (2009:4), Creswell (2008:23) and Long (2007:47) delineate a number of principles to be adhered to, in ensuring that ethical standards are maintained, such as:

- Do no harm – harm, may be physical or emotional. It may refer to any effect that negatively effects on the participant's self-confidence or well-being. It includes protecting the proper interests of those involved or affected by the research; hence, researchers need to consider the effect of their engagement and consequences of their participation.
- Informed consent - participants should be advised in detail in order to make an informed decision regarding participation in the research study.
- Protect privacy – while informed consent is given, the research respondents have not abdicated their rights to privacy, and therefore can refuse to answer any question on sensitive issues or withdraw from the project at any time.
- Offer reciprocity - respondents sacrifice their valuable time to participate, any attempts to ameliorate the time and effort spent is interpreted positively.
- Treat people equitably – each respondent, they should be treated similarly, with respect and dignity.
- Ensure integrity – the research must be what it is claimed to represent, and all ethical issues need to be taken into consideration.
- Avoid deception – deception occurs when researchers represent their work as something other than what it is. The use of covert methods that compromise privacy and anonymity could put participants at risk.
- Voluntary participation – while linked to informed consent precludes any form of pressure or incentivising to participate in the study. Inducement to participate, when respondents would otherwise decline participation, also negates the principle of voluntary participation.

In view of the foregoing discussion, appropriate steps have been being taken in order to adhere to these ethical guidelines such as upholding the participant's confidentiality, dignity, safety, rights and anonymity.

The purpose, objective and the nature of the study was explained to the participants prior to commencement of the interview process. Informed consent was also sought before participating, and the respondents were informed of their rights to withdrawal, how privacy concerns and issues related to anonymity were addressed. Participants were also guaranteed their safety, that during the process of this research no participant would be put in a situation where they might be harmed - physically, psychologically or otherwise- as a result of their participation.

As some of the participant's information was drawn from Eskom database, total anonymity was impossible. However, the researcher maintained confidentiality and anonymity of participants by omitting any identifying information of participants in the questionnaire.

Despite all the above-mentioned precautions, the researcher reiterated that the research was only for academic purposes and participation was voluntary. Participants were not coerced in any way. There was strict adherence to all the ethical guidelines, which guaranteed honesty and trustworthiness of the data collected and the accompanying data analysis.

### 3.14. Summary

This chapter outlined the methodology that is being followed by this study to collect and analyse the research data. The earlier section gave a clear description of the study area and its economic status. In the middle of the chapter, the methodology and philosophical perspective of this study was outlined and the design followed. The last part placed emphasis on the study population, the sampling technique that was applied and the sample size. It also outlined the measuring instrument and its contents, how the collection of data was envisaged and how the data collected was analysed. It finished off by tackling ethical issues related to this study. The next chapter outlines the results obtained from the data collection process and discussion of these results.

# CHAPTER 4

# STATEMENT OF FINDINGS, INTERPRETATION AND DISCUSSION OF THE PRIMARY DATA

## 4.1. INTRODUCTION

This chapter presents the results and discuss the findings obtained from quantitative and qualitative data collected. The questionnaire was the primary tool that was used to collect data and was distributed to selected respondents including officials in all three municipalities. The data collected from the responses was analysed with SPSS version 24.0. The results will present the descriptive statistics in the form of graphs, cross tabulations and other figures for the quantitative data that was collected. Inferential techniques include the use of correlations and chi square test values; which are interpreted using the p-values.

## 4.2. The Sample

In total, ninety questionnaires were administered to household respondents and ninety were returned which gave a 100% response rate.

## 4.3. The Research Instrument

The research instrument consisted of 31 items, with a level of measurement at a nominal or an ordinal level. The questionnaire was divided into 3 sections, which measured various themes as illustrated below:

(a) Biographical data

(b) Access to electricity and household usage

(c) FBE and its impact (for electrified households)

### 4.3. A. Biographical Data

This section summarises the biographical characteristics of the respondents, composed of gender distribution by age, marital status, level of education, employment status, household income and the number of household occupants. Table 4.1 below describes the overall gender distribution by age.

**Table 4.1: Overall gender distribution by age**

| | | | Gender | | Total |
|---|---|---|---|---|---|
| | | | Male | Female | |
| Age Group (years) | 26 - 35 | Count | 10 | 26 | 36 |
| | | % within Age Group | 27.8% | 72.2% | 100.0% |
| | | % within Gender | 27.0% | 49.1% | 40.0% |
| | | % of Total | 11.1% | 28.9% | 40.0% |
| | 36 - 45 | Count | 18 | 16 | 34 |
| | | % within Age Group | 52.9% | 47.1% | 100.0% |
| | | % within Gender | 48.6% | 30.2% | 37.8% |
| | | % of Total | 20.0% | 17.8% | 37.8% |
| | 46 - 60 | Count | 8 | 11 | 19 |
| | | % within Age Group | 42.1% | 57.9% | 100.0% |
| | | % within Gender | 21.6% | 20.8% | 21.1% |
| | | % of Total | 8.9% | 12.2% | 21.1% |
| | 60+ | Count | 1 | 0 | 1 |
| | | % within Age Group | 100.0% | 0.0% | 100.0% |
| | | % within Gender | 2.7% | 0.0% | 1.1% |
| | | % of Total | 1.1% | 0.0% | 1.1% |
| Total | | Count | 37 | 53 | 90 |
| | | % within Age Group | 41.1% | 58.9% | 100.0% |
| | | % within Gender | 100.0% | 100.0% | 100.0% |
| | | % of Total | 41.1% | 58.9% | 100.0% |

Source: Household survey (2017)

Overall, the ratio of males to females is approximately 2:3 (41.1%: 58.9%).
Within the age category of 45 to 60 years, 42.1% were male. Within the category of males (only), 21.6% were between the ages of 45 to 60 years. The category of males between the ages of 45 to 60 years formed 8.9% of the total sample.

The study results as shown in Table 4.1 above indicate that most households interviewed were headed by females aged between 26 and 35 years at a rate of

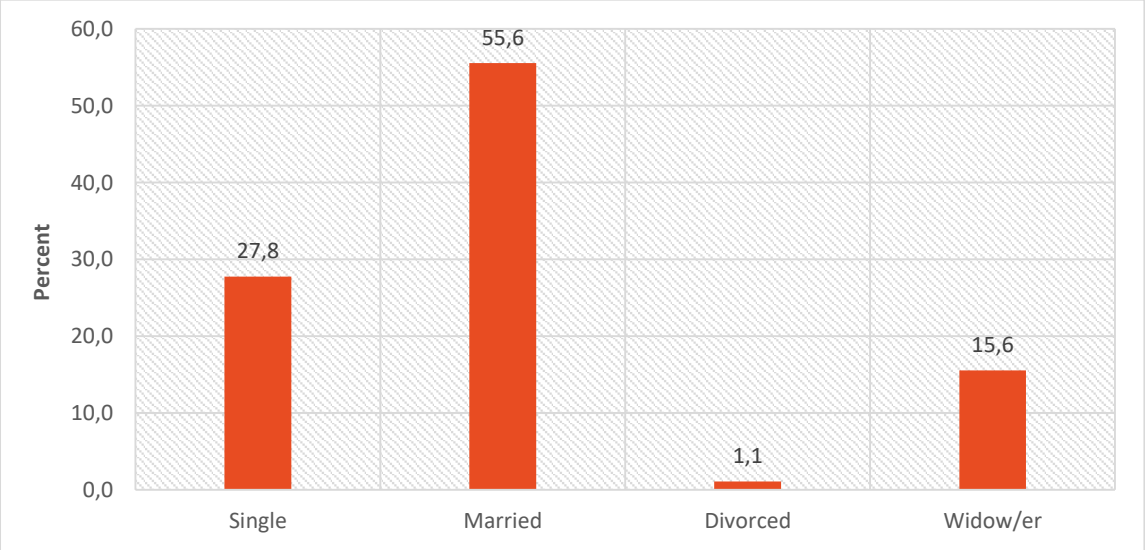
72.2%. This study found that in most cases in the rural Pondoland their male counterparts are away working as migrant labourers mainly in the Platinum belt[3] and the gold mines. The respondents are mostly married at a rate of 55.6% as shown below in Figure 4.1.

By gender, the sample was not significantly different ($p = 0.092$), but age groupings were significantly different ($p < 0.001$).

There are an equal number of respondents from each area ($p > 0.05$).

| | Frequency | Percent |
|---|---|---|
| Ntabankulu | 30 | 33.3 |
| Mbizana | 30 | 33.3 |
| Ingquza | 30 | 33.3 |
| Total | 90 | 100.0 |

**Figure 4.1: Marital status of respondents**

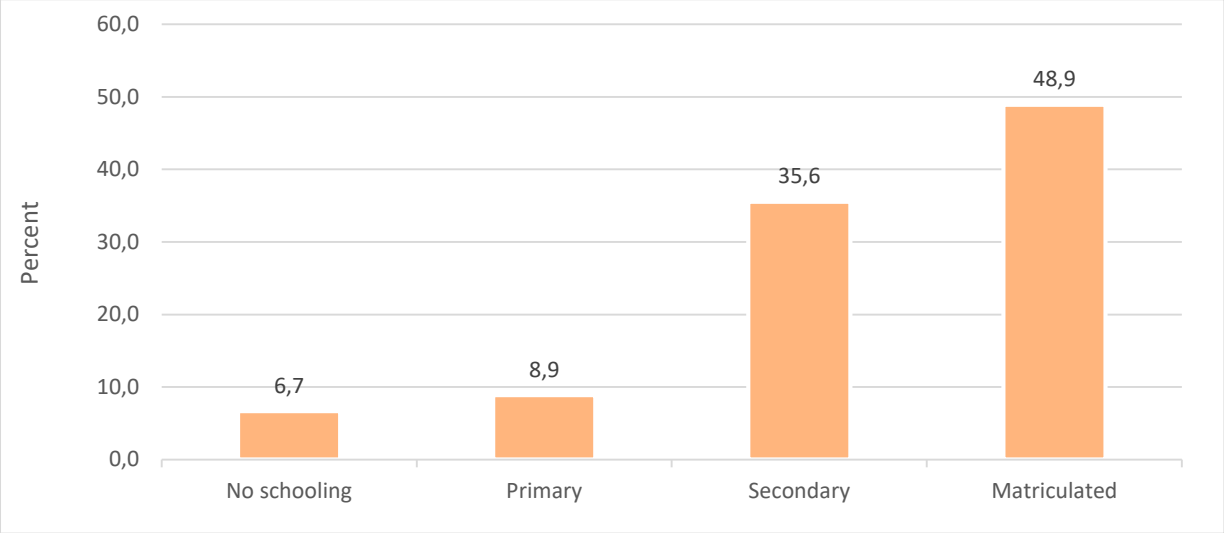



Source: Household survey (2017)

The scoring patterns were significantly different ($p < 0.001$). As represented in Figure 4.1 above, 55.6% were married, 27.8% single, 15.6% widowed and 1.1% divorced showing that there is a very low rate of divorce in the rural areas.

[3] Platinum Belt is an area of Greater Rustenburg, approximately an hour's drive from Johannesburg, and it is home to platinum mining towns such as Rustenburg, Marikana, Brits, etc.

**Figure 4.2: Level of education of the respondents**



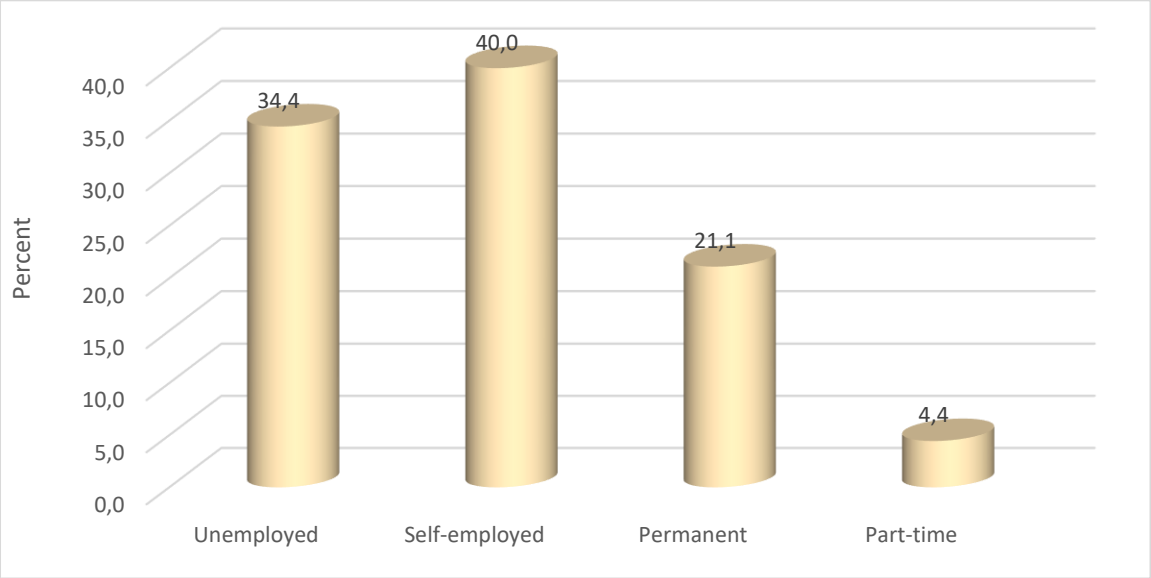

Source: Household survey (2017)

None of the respondents had a post school qualification, with nearly half having completed high school ($p < 0.001$). Figure 4.2 shows that the majority of respondents at nearly 50% have matriculated, followed by 35.6% with secondary education and with primary and no schooling at all, at 8.9% and 6.7%, respectively. Looking at these patterns with no post school qualification, within the context of this study it shows that the level of education does have a direct bearing on the quality of life as this study is looking at the indigents. Despite the high rate of unemployment in South Africa, with no post school qualification, these respondents are not empowered which makes it difficult for them to find decent employment so that they can earn decent salaries and not be classified as indigents. The government with the aim of improving the quality of life of the indigents introduced the FBE policy, as discussed in Chapter 2 under section 2.5.4 that FBE is a typical example of a normative social policy, hence the FBE policy is deemed to be a manifestation of a 'welfare state'. Without post school education, there is no decent employment resulting in impoverishment and the state of welfarism flourishes as people are dependent on the government for their wellbeing.

Employment status of the respondents is further discussed below in Figure 4.3.

As much as other demographic characterisations such as age, gender, marital status and employment status are important, level of education plays a very important role in how the respondents interpret statements and questions contained in the questionnaire and this further impact on the quality of responses.

**Figure 4.3: Employment status of the respondents**



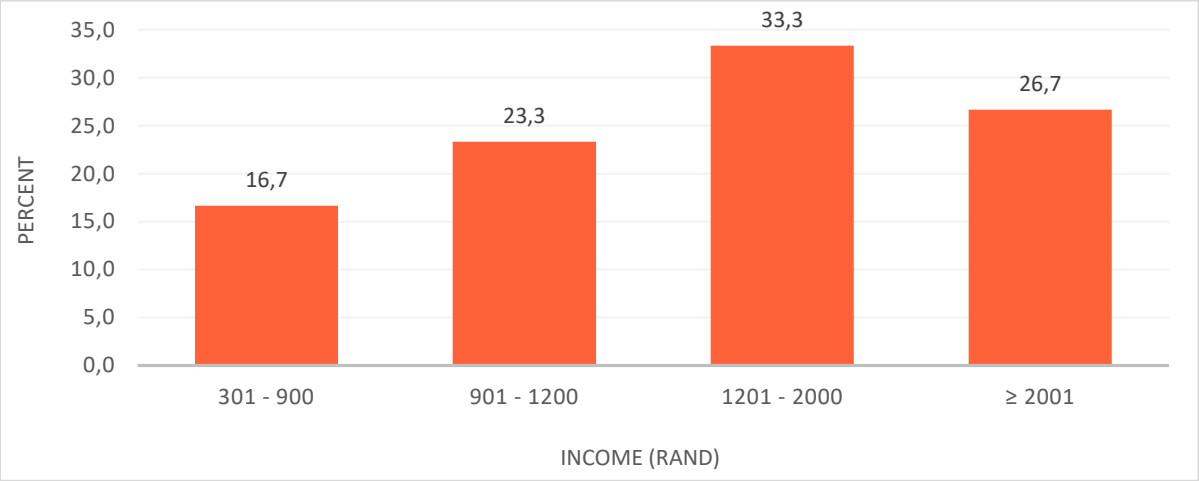

Source: Household survey (2017)

As previously discussed in Chapter 3 under the economic profile of the study area that there is a high rate of unemployment in this part of the world. It contributes to the effects of high unemployment rate that are currently being felt throughout the country. According to a report released by StatsSA, unemployment rate in the first quarter of 2017 was sitting at 27.7% and it was regarded as the highest figure since September 2003 (StatsSA, 2017).

The number of respondents per category varies significantly ($p < 0.001$). There are as many unemployed respondents as there are who are self-employed. About 40% of respondents are self-employed and they are mainly street vendors selling fruit, vegetables etc. others are selling alcoholic beverages from their homes. About 35% is unemployed and as previously mentioned that these are mostly housewives who rely on monthly allowances that are sent by their husbands who are migrant labourers. In addition, the rest are permanently employed at about 21% and about 4.4% is

employed on a part-time basis, and they are mainly involved in the government's Expanded Public Works Programme[4] (EPWP), others are working as domestic workers and the rest are doing clerical work in the offices in the surrounding towns. With regards to households with pensioners, the eldest child who could understand and be able to interpret the questions was interviewed and they were mostly working and could only be found after business hours and over the weekends.

**Figure 4.4: Average household income**



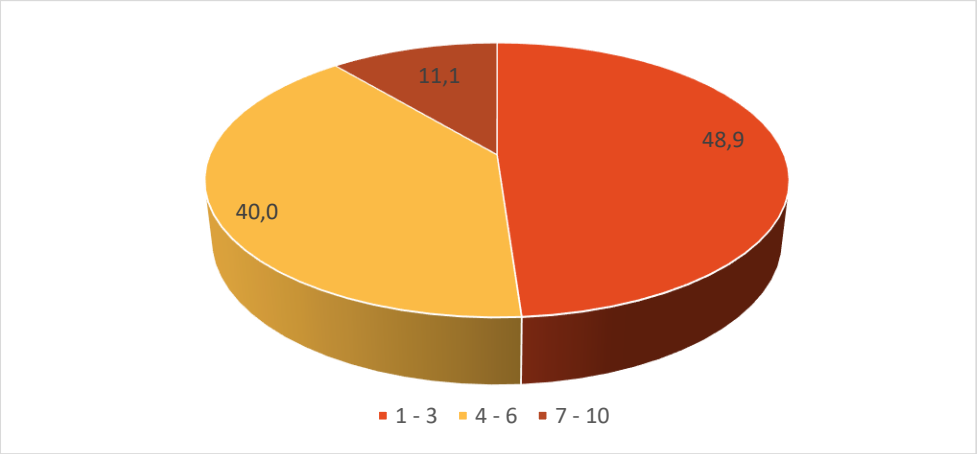

Source: Household survey (2017)

There is not much variation statistically (p = 0.158) in the number of respondents per range. Nearly three-quarters of the respondents earn less than R2000. Figure 4.4 above indicates that just more than 30% earn between R1200 and R2000 and only about 27% of the respondents have a monthly income of more than R2000. These figures direct reflect on the scale of poverty that is being endured in this area. Figure 4.5 below indicates the number of household's occupants.

**Figure 4.5: Number of household occupants**

[4] "The Expanded Public Works Programme (EPWP) has its origins in Growth and Development Summit (GDS) of 2003. At the Summit, four themes were adopted, one of which was 'More jobs, better jobs, decent work for all'. The GDS agreed that public works programmes can provide poverty and income relief through temporary work for the unemployed to carry out socially useful activities" (Department of Public works, 2013).

**Figure 4.5: Number of household occupants**




Source: Household survey (2017)

Household size indicates the number of occupants in the households that participated on the study that are dependent on electricity connection. The ratios per household category varies significantly ($p < 0.001$). The smallest proportion (11.1%) have the largest number of members (7 to 10).

Largest proportion (48.9%) have the smallest number of household occupants between 1 and 3. Moreover, 40% of households comprised of between 4 and 6 household members.

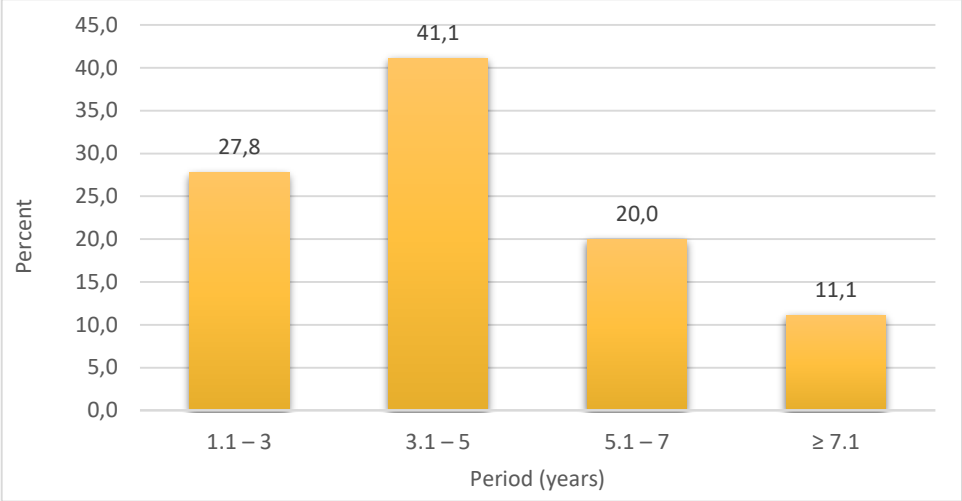
### 4.3. B. Access to electricity and household usage

This section analyses the scoring patterns of the respondents per variable per section. The results are first presented using summarised percentages for the variables that constitute each section. Results are then further analysed according to the importance of the statements.

This section looks at all of the households that indicated they received electricity. The areas that the study focused on are rural, meaning that they are Eskom supplied areas and none of the Municipality supplied areas were visited.

| | Frequency | Percent |
|---|---|---|
| Yes | 90 | 100.0 |

**Figure 4.6: Period of electricity connection**




Source: Household survey (2017)

There was a significant difference as to when respondents received electricity (p = 0.001). Figure 4.6 shows the larger proportion of respondents (41.1%) were recent recipients of more than 3 years and 1 month but not more than 5 years. Nearly 28% had electricity for just more than a year and 1 month up to a period of 3 years while there no respondents had electricity for less than a year.

The study also found that the largest proportion that receives FBE subsidy come from those that had had electricity for a period of more than 3 years and they make up more than 70%.

The respondents who indicated that they do receive electricity were further asked how they access electricity.

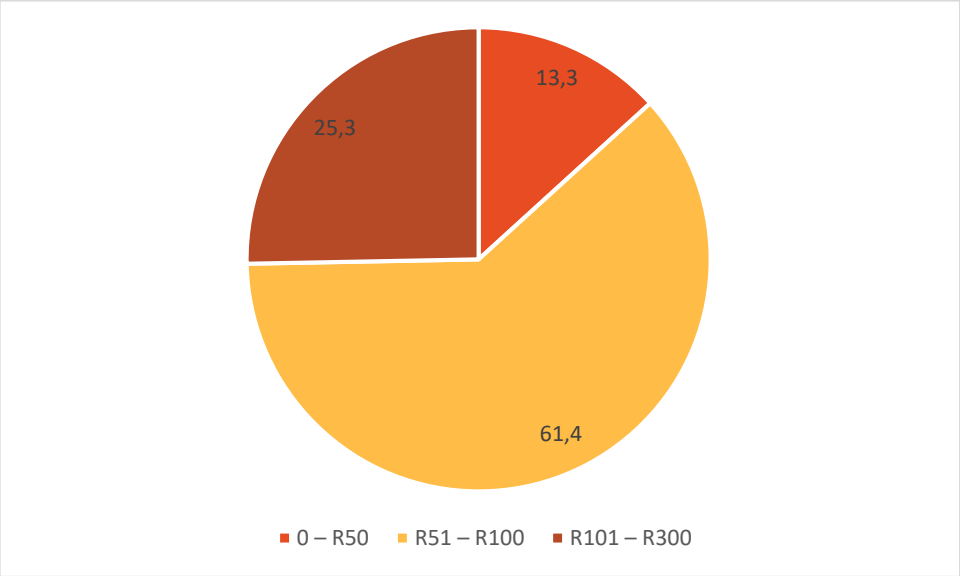
**Table 4.2: Ways of accessing electricity**

| | Frequency | Percent |
|---|---|---|
| I buy it | 83 | 92.2 |
| I have a tampered/bridged meter | 7 | 7.8 |
| Total | 90 | 100.0 |

Source: Household survey (2017)

Table 4.2 above depicts that there is a majority of 92.2% respondents who indicated that they purchase electricity whilst nearly 8% have tampered with or bridged meters and their electricity connections were disconnected ($p < 0.001$).

**Figure 4.7: Average purchase amount per month of electricity token**



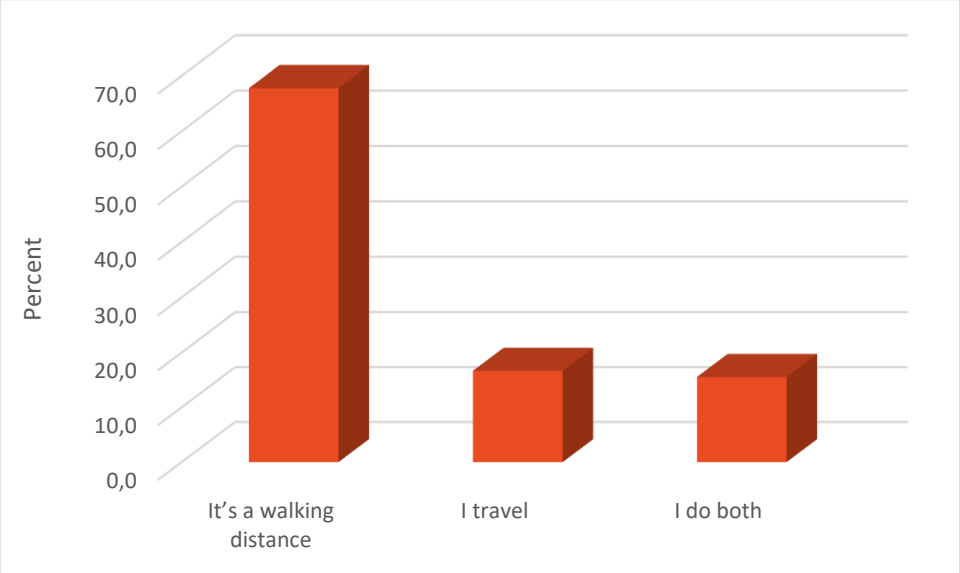

Source: Household survey (2017)

Eskom's tariff structure for residential customers i.e. Homelight 20A[5] and 60A customers is an inclining block tariff (IBT). This means it is a tariff structure with tariff charges that change based on the amount of consumption. As consumption increases, the tariff rates become more expensive. Block 1 (20A), with 0 to 350 kWh is at a tariff rate of R104.26 VAT included while Block 2 (20A) with 350 kWh and above is at a rate of R118.00 VAT included. FBE will form part of the first block for customers on the Homelight 20A tariff, that is, the first 50 kWh of the 350 kWh will be free (Eskom, 2016). The aforementioned prices are approved by NERSA for 2016/17 financial year. However, it must be noted that the change in tariff structures does not discard the FBE portion of qualifying customers, as Eskom is merely a service provider and do not determine the qualification criteria of customers but only implement the criteria set by the local government.

[5] Homelight 20A: caters for customers with very low consumption. These customers mostly use electricity for lighting and heating.
Homelight 60A: caters for customers with low to medium/higher usage (typically supplying suburban higher-usage households in urban areas with a number of electrical appliances, including a geyser).

It is also important to note that the respondents in this study were on Homelight 20A tariff. As shown in Figure 4.7 above, significantly more respondents (61.4%) spend between R51 and R100 compared to the other values of tokens ($p < 0.001$). Followed by those who spend between R101 and R300 at 25.3% and the rest (13.3%) indicated that they spend less than R50 per month for an electricity token. The study found that among those households who spend between 0 and R50 had fewer electrical appliances, they ended up consuming the monthly supply of 50 kWh of FBE, and there were those households that were not purchasing at all because of illegal connections and/or tampered meters.

**Figure 4.8: Proximity of an electricity vendor**




Source: Household survey (2017)

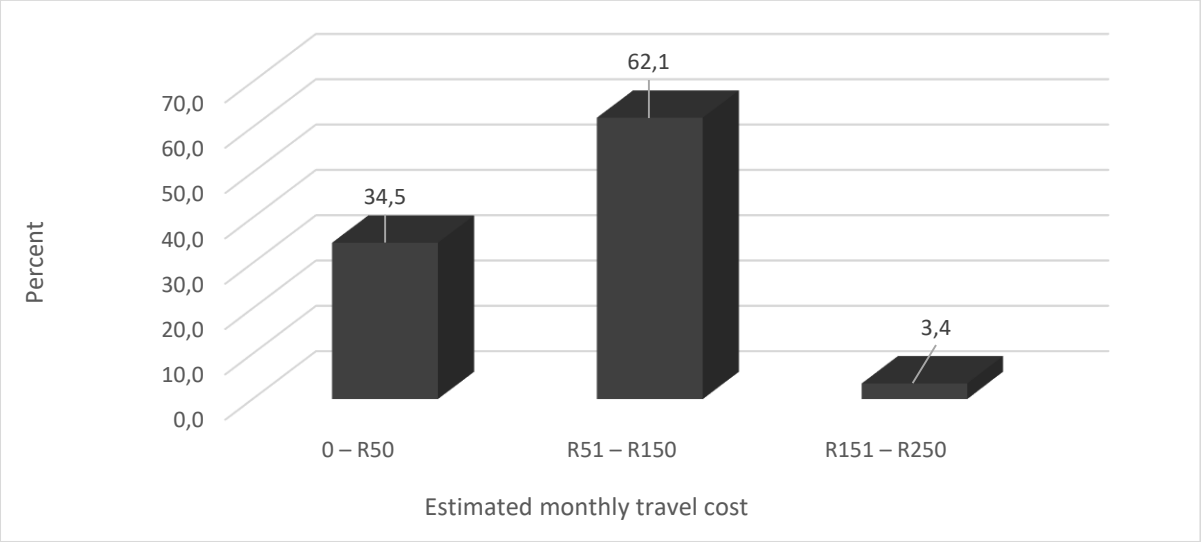
As reflected in Figure 4.8 above that the majority of respondents about 65% indicated that the vendor was within walking distance ($p < 0.001$). Other respondents both below 20% indicated that they travel and others do both traveling and walking. For those that indicated travelling and both, the means of transportation that are being utilised are reflected on Table 4.3 below.

**Table 4.3: Means of transportation to and from an electricity vendor**

| | Frequency | Percent |
|---|---|---|
| Local bus/bakkies | 6 | 6.7 |
| Local bakkies | 5 | 5.6 |
| sometimes use a taxi | 5 | 5.6 |
| use a local bus or a taxi | 4 | 4.4 |
| Own transport | 3 | 3.3 |
| use a taxi | 3 | 3.3 |
| own car | 2 | 2.2 |
| Local bus | 1 | 1.1 |

Source: Household survey (2017)

**Figure 4.9: Estimation of monthly travelling costs to and from an electricity vendor**




Source: Household survey (2017)

Figure 4.9 above shows that the amounts that are spent by those respondents that travel to the electricity vendors vary significantly with nearly two-thirds with 62.1% spending between R51 to R150 (p = 0.001). With 34.5% spending between 0 and R50, and only 3.4% spending between R151 and R250.

The study found that those traveling to an electricity vendor do not normally travel for a sole purpose of buying electricity but to also do some household chores like shopping in the surrounding towns. The household participants were further asked about the electrical appliances that they have and the majority of more than 95% had an electric stove, as this was essential for cooking, as indicated in Table 4.4 below. It was also logical that cooking is the household electrical activity that consumes most

electricity. The difference in the quantities of the items possessed was significant ($p < 0.001$).

**Table 4.4: Electrical appliances and consumption**

| | Frequency | Percent |
|---|---|---|
| TV | 2 | 2.3 |
| Refrigerator | 2 | 2.3 |
| Stove (2 or 4 plate) | 82 | 95.3 |
| Total | 86 | 100.0 |

| | Frequency | Percent |
|---|---|---|
| Cooking | 80 | 93.0 |
| Lighting | 5 | 5.8 |
| Space heating | 1 | 1.2 |
| Total | 86 | 100.0 |

Source: Household survey (2017)

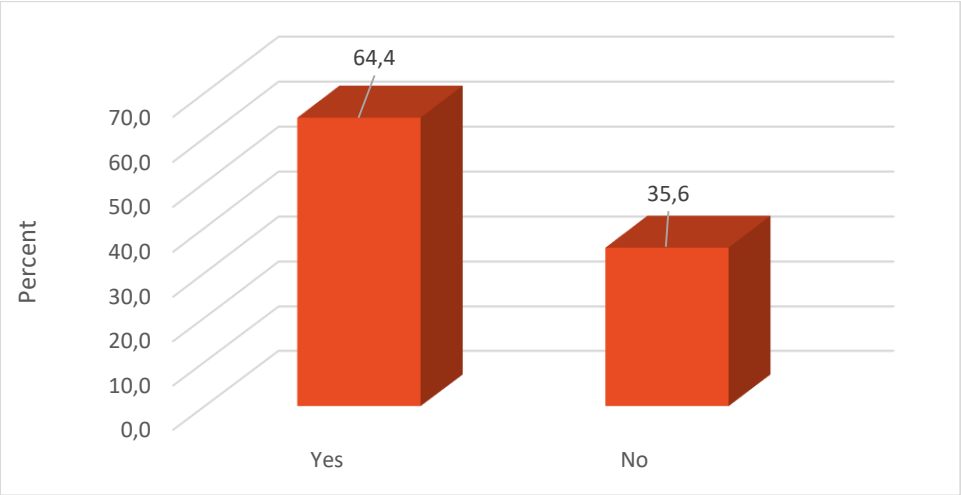
### 4.3. C. FBE and its impact

As the previous section indicated that all the respondents had access to electricity, this section looks at those households that receive FBE subsidy and its impact as well as investigates the reasons among those who do not receive this subsidy. Among the reasons cited by the respondents for not receiving FBE, there were those with tampered meters as shown in Table 4.5 below. It is important to note that when probed further about this, these respondents indicated that they are aware of the dangers of electricity and the fact that stealing electricity is treated as a criminal act which can result to imprisonment, but they alluded to poverty (as in they do not have money to buy electricity) as the main reason for committing this act. Another reason cited by these respondents are delays by Eskom in fixing/repairing their meter boxes whenever they are experiencing some problems and end up doing these illegal connections.

The issue of these illegal connections is causing commotion in some of these communities, with residents that are legally connected complaining that there are regular blackouts caused by these illegal connections because of the Eskom network becoming overloaded. Some of the respondents are also complained that the local

headmen and the councillors are supposed to intervene and come up with resolutions but nothing is happening.

**Figure 4.10: Distribution of households that receive and non-recipients of FBE**




Source: Household survey (2017)

Figure 4.10 above, indicates nearly twice as many (64.4%) respondents indicated that they do receive the FBE (p = 0.006). With 35.6% respondents indicating that they did not receive FBE, Table 4.5 below list some of the reasons provided by the respondents for not receiving FBE. Majority of respondents who do not receive FBE subsidy cited the issue of unregistered meters as the reason, with others indicated that they had submitted their details but they are still waiting from the municipality to be registered as indigents and then there were those who had meters that are tampered with. The study also revealed that after the completion of an electrification project done by either Eskom or the municipality, the meters are left unregistered and people have to take it upon themselves to have their meters registered. These communities also complained about the proximity of Eskom offices as a custodian in these areas, in trying to have their meters registered, and apparently, there is no assistance from the councillors, ward committees and the community development workers.

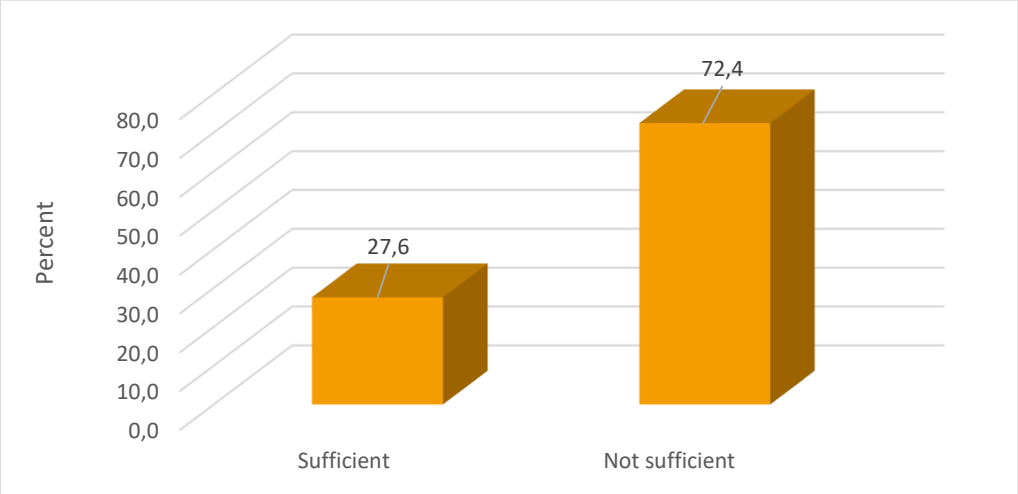
**Table 4.5: Reasons provided by the respondents for not receiving FBE subsidy**

| | Frequency | Percent |
|---|---|---|
| meter not registered | 9 | 10.0 |
| submitted my details, still awaiting assistance | 5 | 5.6 |
| awaiting assistance from the Cllr | 4 | 4.4 |
| meter is tampered with | 4 | 4.4 |
| meter is not registered | 3 | 3.3 |
| meter tampered with | 3 | 3.3 |
| still waiting from the municipality | 3 | 3.3 |
| meter not registered | 1 | 1.1 |

Source: Household survey (2017)

Those respondents that do receive FBE subsidy were further asked the amount of FBE that they receive monthly and they all indicated that they get 50 kWh per month. Figure 4.11 below shows the expressions of the respondents on the adequacy of a monthly amount of FBE received.

**Figure 4.11: The adequacy of the monthly amount of FBE**




Source: Household survey (2017)

Significantly more respondents (72.4%) indicated that the allocation was not sufficient ($p = 0.001$). Only 27.6% indicated that that the allocation was sufficient, Table 4.6 below lists some of the reasons that were given on the adequacy of a monthly amount of FBE. Majority of respondents indicated that, despite the monthly FBE subsidy they still have to top up the electricity units out of their own pockets.

**Table 4.6: Some of the reasons given on the adequacy of a monthly FBE**

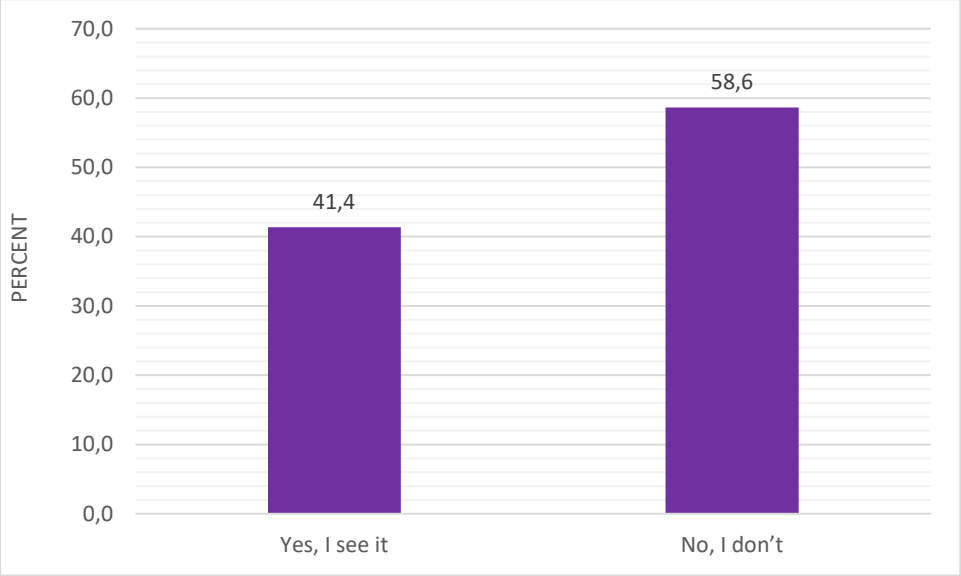
| | Frequency | Percent |
|---|---|---|
| I have to top it up | 17 | 18.9 |
| I have to top it up by buying | 15 | 16.7 |
| I now only buy once a month | 11 | 12.2 |
| I have to top it up by R50 - R100 per month | 7 | 7.8 |
| At least we buy once a month | 4 | 4.4 |
| I have to top it up by R50 per month | 1 | 1.1 |
| I mostly cook outside using wood | 1 | 1.1 |
| I top it up by R50 per month | 1 | 1.1 |
| We have to top it up by R100 per month | 1 | 1.1 |

Source: Household survey (2017)

When asked how they receive their monthly FBE tokens, all the respondents who receive FBE indicated that they have to first purchase electricity before they can receive their monthly tokens. At least minimum of R10 must be used to buy electricity so that their FBE tokens can also be printed out with the purchased token. This is another anomaly in the implementation of FBE that needs to be looked at, by all the relevant stakeholders. The FBE policy does not specify that the indigent households must first purchase electricity before they can be issued out with their monthly FBE token. This can be viewed as an exploitation coming from the vending side.

The study also wanted to establish if there is any impact made by the introduction of FBE subsidy on the quality of life of the indigent households. Figure 4.12 below illustrate the aggregate views of the respondents on whether they noticed any difference in the household since the introduction of FBE.

**Figure 4.12: Aggregate views on difference noticed before and after FBE**

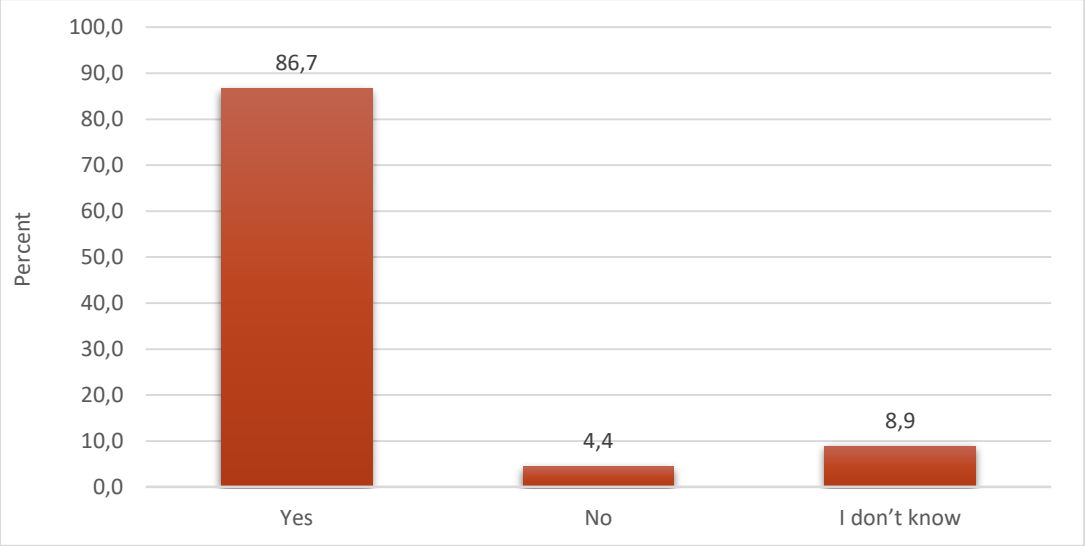



Source: Household survey (2017)

There is no significant difference between the yes and no's (p = 0.189). This is the core focus of the study as it seeks to uncover the contribution made by FBE in reducing energy poverty. As illustrated earlier on, in Figure 4.3 that the majority of the respondents are self-employed, with some selling from home using electricity. These are some of the respondents who found some sort relief in FBE indicating that even though the 50 kWh they are receiving monthly it is not enough, it offers some relief in terms of a monthly expenditure on electricity. As indicated above in Figure 4.12, just above 40% of respondents indicated that the extra 50 units that they are receiving are very helpful in a sense that they end up spending less on electricity. Almost 60% indicated that they do not see any difference in the quality of life of the household since the introduction of FBE.

To measure the level of electricity and FBE awareness, respondents were asked whether there were any electricity/FBE awareness campaigns held in their respective areas. Figure 4.13 below indicates various responses that were provided.

**Figure 4.13: Electricity/FBE awareness campaigns held**



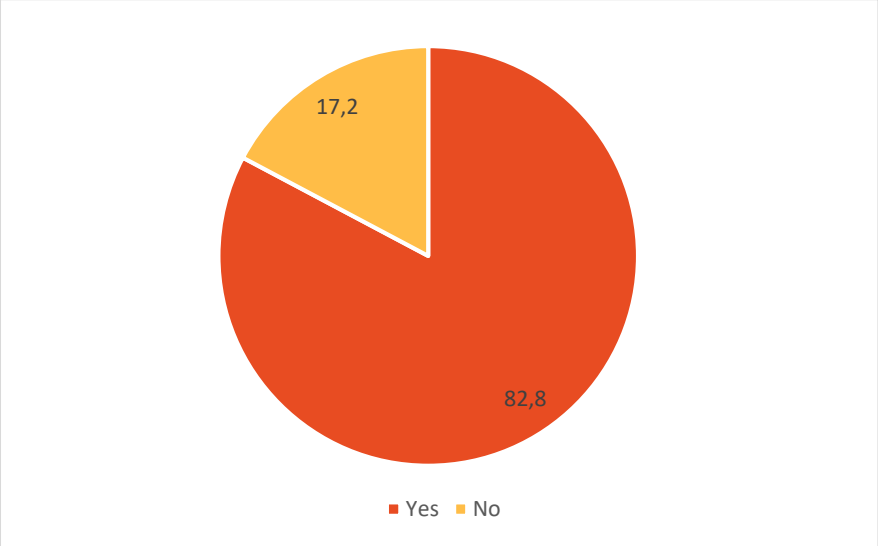

Source: Household survey (2017)

Significantly, more respondents at 86.7% stated "Yes" there were electricity/FBE awareness campaigns held in their areas ($p < 0.001$). Almost 9% did not have any knowledge of these campaigns while the mere 4.4% indicated that there were no electricity and FBE awareness campaigns that were held in their area. Respondents were further asked when last or how often are these campaigns being held, and the majority of 53% indicated that they were held in less than a year and they were an ongoing process that is being held yearly.

On how did they find out about FBE, the study found out that the majority of the respondents heard about FBE from their ward councillors, others from the awareness meetings held by Eskom and the rest from their fellow villagers.

Figure 4.14 below indicates various expressions shown by the respondents when asked whether they had any advice in improving access to FBE. Significantly, more respondents indicated that they did have ($p < 0.001$). Almost 83% indicated that they did have advice on improving access of FBE subsidy while just over 17% indicated that they did not have any advice.

**Figure 4.14: Advice on improving access of FBE**




Source: Household survey (2017)

With those that indicated that they had advice, they were further asked what can be done towards improving the access of FBE, Table 4.7 lists some of the advice/opinions that they gave in improving the FBE.

**Table 4.7: Some of the advice given in improving FBE access**

| | Frequency | Percent |
|---|---|---|
| Increase the monthly amount of this subsidy in order to meet our electricity needs | 15 | 16.7 |
| Increase it to at least 100 units per month | 13 | 14.4 |
| Municipalities. must speed up the registration process for this subsidy | 9 | 10.0 |
| Registration process for this subsidy must be sped up | 8 | 8.9 |
| Increase monthly amount to 100 units | 7 | 7.8 |
| Councillor must assist in registering our meters | 6 | 6.7 |
| speed up the process of registering people for this subsidy | 4 | 4.4 |
| Councillor must assist with the registration of our meters | 3 | 3.3 |
| Increase the monthly amount of units | 3 | 3.3 |
| Councillor must assist in the registration of our meters so that we can also benefit | 2 | 2.2 |
| People are not getting this benefit because their meters are not registered | 2 | 2.2 |
| Increase the monthly amount to 100 units | 1 | 1.1 |

Source: Household survey (2017)

Mainly the respondents indicated that the current amount of FBE is insufficient and it needs to be increased in order to meet their electricity needs. Others expressed a view that municipalities need to speed up their processes of registration of indigents, indicating that they give out their details (names, ID numbers, proof of income etc.) but

still the process takes long for them to benefit as indigents. While other respondents indicated that if they could get assistance from their ward councillors in getting their electricity meters registered by Eskom as this would make things much easier because they do qualify as indigents but their meters are not registered and they end up not benefiting. The study also noted that after the completion of an electrification project, it takes long for Eskom to register the prepaid meters of the newly electrified communities and this further put those who were supposed to benefit as indigents at a disadvantage.

### 4.4. Hypothesis Testing

The traditional approach to reporting a result requires a statement of statistical significance. A **p-value** is generated from a **test statistic.** A significant result is indicated with "p < 0.05". These values are highlighted with a *.

A second Chi square test was performed to determine whether there was a statistically significant relationship between the variables (rows vs columns).

The null hypothesis states that there is no association between the two. The alternate hypothesis indicates that there is an association. The tests are between the biographical factors and the statements.

Table 4.8 below summarises the results of the chi square tests.

**Table 4.8: Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|---|---|---|---|---|---|---|
| Pearson Chi-Square | 19.268[a] | 9 | 0,023 | 0,017 | | |
| Likelihood Ratio | 18,659 | 9 | 0,028 | 0,022 | | |
| Fisher's Exact Test | 18,147 | | | 0,014 | | |
| Linear-by-Linear Association | 1.456[b] | 1 | 0,227 | 0,249 | 0,127 | 0,022 |
| N of Valid Cases | 90 | | | | | |

The p-value between “For how long have the household had electricity?” and “Marital Status” is 0.014. This means that there is a significant relationship between the variables highlighted in yellow. That is, the marital status of the respondent did play a significant role in terms of how long respondents have had electricity. Table 4.9 below

used a cross tabulation to show the relationship between these variables. All values without an * (or p-values more than 0.05) do not have a significant relationship.

**Table 4.9: Correlation between the period of having electricity and the marital status**

| | | | Marital Status | | | | Total |
|---|---|---|---|---|---|---|---|
| | | | Single | Married | Divorced | Widow/er | |
| For how long have the household had electricity? | 1.1 – 3 | Count | 5 | 16 | 0 | 4 | 25 |
| | | % within Marital Status | 20,0% | 32,0% | 0,0% | 28,6% | 27,8% |
| | 3.1 – 5 | Count | 16 | 17 | 0 | 4 | 37 |
| | | % within Marital Status | 64,0% | 34,0% | 0,0% | 28,6% | 41,1% |
| | 5.1 – 7 | Count | 1 | 14 | 1 | 2 | 18 |
| | | % within Marital Status | 4,0% | 28,0% | 100,0% | 14,3% | 20,0% |
| | ≥ 7.1 | Count | 3 | 3 | 0 | 4 | 10 |
| | | % within Marital Status | 12,0% | 6,0% | 0,0% | 28,6% | 11,1% |
| Total | | Count | 25 | 50 | 1 | 14 | 90 |
| | | % within Marital Status | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% |

Source: Household survey (2017)

The study reveals that there is a significant correlation between marital status and the period of having electricity. There is a statistical evidence to suggest a correlation between these two variables (p=0.014). From the cross tabulation in Table 4.9 above the following can be observed, those that have had electricity for longer periods are those who are married. From 1.1 years to 3 years (32%), 3.1 years to 5 years (34%), 5.1 years to 7 years (28%) with more than 7 years at 6%.

Cross tabulation in Table 4.10 below shows a correlation between a level of education and the FBE recipients.

**Table 4.10: Correlation between the level of education and FBE recipients**

| | | | Highest level of education | | | | Total |
|---|---|---|---|---|---|---|---|
| | | | No schooling | Primary | Secondary | Matriculated | |
| Does your household receive FBE? | Yes | Count | 6 | 5 | 13 | 34 | 58 |
| | | % within Highest level of education | 100,0% | 62,5% | 40,6% | 77,3% | 64,4% |
| | No | Count | 0 | 3 | 19 | 10 | 32 |
| | | % within Highest level of education | 0,0% | 37,5% | 59,4% | 22,7% | 35,6% |
| Total | | Count | 6 | 8 | 32 | 44 | 90 |
| | | % within Highest level of education | 100,0% | 100,0 % | 100,0% | 100,0% | 100,0 % |

Source: Household survey (2017)

Table 4.10 above shows a significant correlation between the respondents that receive FBE and their level of education. The p-value between the households that receive FBE and the household's head level of education is 0.002. Study reveals that those who do not receive FBE subsidy is 0% (no formal schooling), 37.5% (primary schooling), 59.4% (secondary schooling) and 22.7% of those who have matriculated. As pointed out earlier that the level of education also plays an important role in improving the quality of life and in determining the indigence of a household.

**Table 4.11: Correlation between a household income and the suitability of FBE**

| | | | Household income | | | | Total |
|---|---|---|---|---|---|---|---|
| | | | 301 - 900 | 901 - 1200 | 1201 - 2000 | ≥ 2001 | |
| Does the amount of FBE you receive per month sufficient for the household electricity needs? | Sufficient | Count | 0 | 3 | 4 | 9 | 16 |
| | | % within Household income | 0,0% | 23,1% | 22,2% | 50,0% | 27,6% |
| | Not sufficient | Count | 9 | 10 | 14 | 9 | 42 |
| | | % within Household income | 100,0 % | 76,9% | 77,8% | 50,0% | 72,4% |
| Total | | Count | 9 | 13 | 18 | 18 | 58 |
| | | % within Household income | 100,0 % | 100,0 % | 100,0 % | 100,0 % | 100,0 % |

Source: Household survey (20017)

The study shows that there is a statistical evidence to suggest a significant correlation between these two variables at p-value 0.039. 100% of the respondents within the income bracket of between R301 to R900 indicated that the monthly amount of FBE is not sufficient. While 76.9% of those within the income bracket of between R901 to R1200 indicated that the monthly amount of FBE subsidy provided is not sufficient.

77.8% of those who earned between R1201 to R2000 indicated that the monthly amount of FBE is not sufficient and 50% of those who get more than R2000 indicated that the monthly amount of FBE was not sufficient. This is logical because significantly those who earn lesser amounts per month are not happy with the amount of FBE that they receive.

### 4.5. Officials' perspective with regards to provision of FBE

The survey solicited views from officials with regards to the implementation of FBE policy in its current form. Within the context of this study, the opinions solicited from the discussions with the officials and the councillors are expected to shed some light on the challenges and the shortcomings that are currently faced by the local municipalities, CoGTA and Eskom in the effective implementation of this policy. The survey elicited views from the respondents on key themes such as (i) provision of FBE, (ii) challenges faced in FBE implementation, (iii) consultation process among the stakeholders, (iv) education and awareness, and (v) tracking and compliance.

The respondents conceded that the study touches a critical area and it is based within a good context as energy poverty is still a major problem in the rural areas. Despite the findings uncovered on the foregoing sections of this chapter, these dialogues also showed some interesting dimension with regards to FBE implementation. The officials and councillors who were involved in these dialogues are shown below in Table 4.12.

**Table 4.12: Officials and councillors**

| Respondent | Title | District |
|---|---|---|
| **Respondent 1** | Free Basic Services Co-ordinator | Ingquza Hill Local Municipality |
| **Respondent 2** | Indigent/Free Basic Services (FBS) Co-ordinator | Mbizana Local Municipality |
| **Respondent 3** | Indigent Coordinator | Ntabankulu Local Municipality |
| **Respondent 4** | Officer FBE and Vending Management | Eskom<br>Eastern Cape Operating Unit |
| **Respondent 5** | Manager: Office of the DDG: Developmental Local Government Branch | CoGTA<br>Eastern Cape |
| **Respondent 6** | Ward Councillor | Ingquza Hill Local Municipality |
| **Respondent 7** | Ward Councillor | Mbizana Local Municipality |
| **Respondent 8** | Ward Councillor | Ntabankulu Local Municipality |

Source: Officials' interviews

There were eight respondents as listed in the above Table 4.12. One manager, three coordinators, one officer and three ward councillors were interviewed. These individuals belonged to key areas as per their titles shown above. This shows that the data obtained was derived from people that were knowledgeable in the targeted areas. Some of the key themes that were generated are discussed below:

### 4.5.1. Provision of FBE

This was the key theme that in turn inform the subsequent themes with their various subthemes. The current rate of FBE that is provided by all three municipalities is 50 kWh. However, there are variations in the rate of FBE that is being provided by the municipalities across the spectrum and this is dependent on factors such as generation of revenue by the specific municipality. The more revenue that is generated can impact on rate of the FBE in some municipalities. For example, it was gathered that Nelson Mandela Metropolitan Municipality in the Eastern Cape Province is

providing a monthly rate of 70 kWh of FBE because of their financial standing. Conversely, in areas where there is no grid electricity, Free Basic Alternative Energy (FBAE) is provided such as Liquefied Petroleum Gas (LPG), solar energy and paraffin depending on the suitability to that particular area. For example, it was indicated that LPG is provided in places where there is no grid electricity in the Nyandeni area while at Ingquza Hill, paraffin is being provided. Other FBAE services offered by these municipalities include waste removal, alternative energy in the form of solar panels, paraffin and LPG.

The municipalities indicated that certain criteria need to be met in order to qualify for FBE, obviously referring to those households that are connected on the grid. The fundamental requirements that have to be met are listed below:

- Combined household income must not be more than the amount of two pension grants,
- Applicants to be a resident in the municipal area, and
- Applicants must possess a South African ID.

Most of the respondents who were interviewed pointed out that the rate of FBE that is currently provided is seen to be insufficient and this is primarily because it is not enough to meet the needs of indigent households. The emergence of electricity in the rural areas compelled households to invest in more electrical appliances and to relieve women from the burden of fetching wood for cooking and space heating. Therefore, households are now using more electrical appliances hence the monthly rate of FBE is viewed as insufficient. In addition, the high levels of poverty in the area demands more FBE to alleviate energy poverty, as alluded to earlier those households are required to top up the monthly FBE by using their own monies. For instance, Mbizana indicated that the municipal policy allows for ‘80 kWh’ but budgetary constraints enables just 50 kWh (this relates to budget challenges). It was recommended that an increase must be considered, such as 100 kWh would be ideal.

Another issue was the update of indigent registers, which seems to be done mostly on a yearly basis with only one municipality conveying that it was done on a quarterly basis. Yearly updates can pose problems due to the status of ‘being indigent’ subject to change.

There seems to be no other solutions that the municipalities can adopt (except for the increase in the monthly rate) in improving the FBE policy as per the respondents. However, one respondent from Ingquza Hill suggested that the data collection in terms of updating the indigent registers needs to be reviewed more frequently such as quarterly rather than annually. However, this is a review of the data and not a solution as such. The review of data may not inform strategy and/or solutions.

### 4.5.2. Challenges faced in FBE implementation

The respondents pointed out various challenges that exist in terms of FBE implementation and these include factors such as:

#### (i) Funding

There seems to be inadequate funding of FBE. Due to this, not all indigent households are obtaining the benefit of FBE. Another key problem to funding refers to payment claims whereby Eskom as a service provider will submit the claim to the municipality a month later after the service (FBE) has been provided. Equitable Share (grants) that is given to the respective Municipalities is being spent on other services, as a result when Eskom sends the claim; the municipality is unable to honour its short-term financial obligation. This could require a rethink of the process and/or even process re-engineering.

#### (ii) Lack/Inaccuracy of Indigent registers

Inaccurate registers are seemingly a common problem among these municipalities. Registers should be developed and maintained more accurately for a proper reflection of indigent and deserving households. There should be more staff that are dedicated and systems to cater for this. Updating of registers, as mentioned earlier, can also be seen as a challenge.

#### (iii) Lack of Awareness

Despite the awareness interventions that are occasionally held by the stakeholders such as the municipalities and Eskom, some households are not aware of this subsidy. Both ward councillors and ward committees attribute this ignorance to low attendance

of community meetings by various community members where pertinent issues such as this one are discussed.

#### (iv) Lack of infrastructure

Eastern Cape Province is still experiencing huge backlogs when it comes to electrification programmes. Therefore, the lack of infrastructure pertains mainly to the lack of grid electricity in certain areas. To address this challenge, Eskom introduced an electrification rollout in their ambitious quest of achieving ‘universal access by 2020’.

#### (v) Shortage of key personnel

Two key respondents whereby a lack of dedicated FBS staff does hinder process flow highlighted this. Due to this, the municipality is forced to outsource some of the activities due to lack of in-house capacity. This challenge also speaks to a lack of funding in these municipalities even though outsourcing also does not solve the challenges that are faced. In this regard, strategic planning at a management level is required.

### 4.5.3. Consultation process among stakeholders

The responses to the consultation process with stakeholders appeared to be of mixed reactions. Consultative meetings are being held with all the relevant stakeholders when needed, however, some conveyed that the working relations with stakeholders are favourable with continuous communication whilst there were some alluding that whilst relationships are favourable, it is not across all municipalities. Furthermore, it was noted that there was a communication problem between FBS personnel from the municipalities and CoGTA whereby the FBS officials are of the opinion that they are not taken as seriously as they should have been by the CoGTA officials from the provincial level and the follow-up process was inconsistent and without strategic direction.

**Deviations included:**

**(a) Difficulties between municipalities and CoGTA and Eskom**

- As above, FBS personnel indicated that there is a lack of commitment from the heads of department of CoGTA at the provincial level, which results in both the lack of monitoring and proper follow up.
- The municipalities have provided delays by Eskom as the primary stakeholder in providing FBE even after lists of beneficiaries.

**(b) Lack of effective engagement**

As above, there seems to be a lack of proper engagement between FBS staff and CoGTA. Furthermore, when holding council meetings, municipalities do not include Community Development Workers (CDW's) and Ward Committees (who are seen as the voice of the people) so that they can take the information back to their respective communities. The lack of this information dissemination can lead to lack of education and awareness. There needs to be better engagement between Eskom and municipalities in ensuring efficacy in the process.

**(c) Politicising**

Some councillors are politicising the implementation of FBE whereby they are prioritising its provision mainly due to political affiliations i.e. people belonging to a certain political party/parties are more prioritised than the ones belonging to the other or without any political affiliation.

**Potential ways to correct or remediate the deviations could include:**

**(a) Indigent Steering Committees**

Municipalities must intensify the establishment of Indigent Steering Committees whereby critical issues regarding the provision of Free Basic Services can be discussed as a means to promote the smooth provision of FBE and other Free Basic Services.

**(b) Regular meetings and Follow ups**

Whilst meetings are held on a 'now and then' basis, there should be more structured meetings to facilitate follow-ups that are more effective and monitoring by CoGTA to ensure that the budget allocated to Free Basic Services is spent appropriately by the municipalities.

**(c) Work Plan Agreement**

The inclusion of Free Basic Services into the Work Plan Agreement by the Municipal Managers is seen as important for the proper management of FBE.

### 4.5.4. Education and Awareness

Most of the education around FBE takes place via awareness campaigns, community forums, FBS workshops as well as traditional imbizos. Community forums from Eskom's side are conducted on a yearly basis in a particular community while the municipalities indicated that they are running their campaigns on a quarterly basis. At some instances, it was indicated that radio stations are also utilised. These types of communication campaigns involve targeting indigent people in large numbers and these are seen as effective means of communication and education. However, despite these efforts in communicating these services, some indigents are still not collecting their FBE tokens regularly even though they are being budgeted for. Some of the respondents suggested that the uncollected tokens must accumulate possibly for a maximum period of three months and if not collected within that particular period they must forfeit those units.

Service Representatives conduct the education that is carried out by Eskom via the community forums, as they are the primary service provider. However, it seems to be a collective responsibility of municipalities, FBS units, ward councillors, ward committees, traditional leaders and all relevant stakeholders when it comes to communicating Free Basic Services. House visits by the ward councillors, ward committees and community development workers can also be useful more especially to the elderly citizens.

### 4.5.5. Tracking and Compliance

- **Tracking**

In one municipality, it was indicated that 80% of indigent households that are benefiting from FBE are collecting their tokens. However, other respondents suggested that the process of tracking the collection of FBE tokens was not effective. This is logical, as it should not be just 80%, all (100%) of indigent households should be collecting tokens every month. Hence, the 20% unaccounted for should be examined. More tracking is needed. As noted earlier in the previous section of this chapter that another hindrance in the collection rate of FBE tokens comes from the side of the vendors as beneficiaries are required to first purchase before they can be given their monthly FBE tokens. Some people are possibly not collecting their monthly tokens because of not having both transport fares and monies to purchase electricity. Apparently, all the stakeholders in these forums that they usually conduct do not properly look at the issue of vendors exploiting the indigents.

- **Compliance**

It seems that the update and maintenance of indigent registers is critical for compliance. As asserted by all the respondents that municipalities need to ensure that the registers of indigent households must be updated. Regular screening should support this to ensure the legitimacy of all FBE beneficiaries. This ties into the subtheme above that spoke of ‘updating of registers’. Without being oblivious to the challenge of capacity in these municipalities, the process of updating the indigent registers only once in a year is viable because as mentioned earlier the state of indigence is not static, hence people end up benefiting unfairly at the expense of those who are supposed to be benefiting.

A key respondent whereby the aspect to ‘policy’ was highlighted raised a mandatory point. The indigent policy serves as an official and guiding document that govern the implementation of FBE. Therefore, it is argued that the municipalities should update their indigent policies in alignment to national guidelines. This can help in supporting proper implementation of FBE.

## 4.6. Summary

This chapter presented and analysed the results obtained from the survey. The data indicates the dissatisfaction among the majority of indigent households as well as the officials and councillors with the monthly rate of FBE in view of the fact that the levels of poverty in the study area are very high. This study also revealed that there are some variations in the provision of FBE depending on the financial stability of a municipality. A number of challenges, which result in some of the deserving indigents, end up not receiving the FBE subsidy and vice versa were highlighted. It was revealed that administratively, politically, technically and in terms of manpower, the implementation of FBE policy is still a challenge. On a positive note, some respondents have shown contentment with the introduction of FBE indicating that they no longer have to spend large amounts of money on electricity. In the next chapter, the overview of the study will be provided as well as the significance of the results obtained from the survey and lastly the necessary recommendations will be made.

# CHAPTER 5

# RECOMMENDATIONS AND CONCLUSION

## 5.1. INTRODUCTION

This chapter provides a summary of this study and it integrates the main findings together with significance of this research. It further looks at the attainment of the research objectives and offer commentary and suggestions regarding the challenges that are faced at implementation phase of FBE in the study area. Lastly, it makes recommendations in enhancing the attainment of an effective policy implementation and suggestions are also made for future research in this regard.

## 5.2. Summary and restatement of the study objectives and questions

This study is aimed at highlighting the benefits and challenges faced in implementing the FBE programme in the Eastern Pondoland area. FBE policy was introduced among other interventions that are aimed at reducing poverty; this study provides an insight into the implementation of this policy and the role it is playing in reducing energy poverty.

Despite the backlog in the electrification programme, great strides were achieved over the years towards electrifying rural areas. According to StatsSA (2012), access to electricity in South Africa increased from 35% of households in 1990 to 84% in 2011. Hence, the study sought the grid-connected rural households that are indigent to express their views on FBE policy. The majority expressed their dissatisfaction with the rate that is currently being provided with a small proportion of the respondents expressing their satisfaction with the subsidy. The statistical evidence collected in the study area backed up these views.

In order to achieve its purpose, the main objective of this study is to explore the extent to which the FBE programme is used to fight energy poverty and improve the quality of life amongst the poorest communities in the Eastern Pondoland area. In order to achieve its main objective, the study also looks at the following factors as they might be forming part of the implementation challenges that are faced:

- Analysing households that benefit from the subsidy against those that do not benefit and the causes of the deviations.
- Looking at the level of awareness of this subsidy and other free basic services among beneficiaries and non-beneficiaries in the area.
- Looking at other hindrances in the implementation phase of the subsidy such as unregistered prepaid meters and tampered meters.

Furthermore, in Chapter 1 the following research questions were formulated to assist in achieving the objectives of the study:

- Are there any benefits that are derived from access to FBE by indigent households in the Eastern Pondoland with regards to improving the quality of life?
- What challenges do the recipients and/or intended recipients of the subsidy encounter when applying for the subsidy?
- Are there any difficulties that municipalities come across during the implementation phase of the subsidy?
- Are there any provisions available that could assist in improving the implementation of the policy where necessary?

Different questionnaires were developed and utilised for data collection. Other respondents who were interviewed were municipality officials, councillors, Eskom and CoGTA officials, their views were sought in order to shed some light on the difficulties that are faced when it comes to implementation of the FBE. They echoed some of the views that were raised by the population sample during the household survey with regards to the amount of FBE.

## 5.3. The main findings of the study

Following a survey that was done on the population sample comprising of ninety households and eight officials, the following main findings were reached:

### 5.3.1. Access to electricity and household usage

The study focus was on grid-connected households in the areas that are supplied by Eskom and it was further noted that the households that were interviewed were on

Homelight 20A tariff. The study found that more than 70% of the respondents that receive FBE are those that had had electricity for a period of more than 3 years.

The study also revealed that there is a significant relationship between a household income and the suitability of FBE. When it comes to a monthly electricity expenditure, the study found that, just over 60% indicated that they spend between R51 and R100, followed by 25.3% who indicated that they spend between R101 and R300 and the rest at just over 13% suggested that they spend R50 and less. It was further revealed that among other factors that motivated this low expenditure on electricity was FBE subsidy and it was also discovered that there were households that had tampered meters, which were both not purchasing electricity and not benefiting on FBE.

### 5.3.2. FBE and its impact

The study found a significant relationship between receiving FBE and a level of education. The study revealed that the respondents receive 50 kWh of FBE on a monthly basis. It was indicated that about 64% of the respondents receive FBE while just above 35% suggested that they did not receive FBE. Various reasons were cited with regards to non-recipients, such as unregistered meters, tampered meters and others complaining about the bottlenecks in the municipality processes, indicating that they had lodged their applications but the waiting process seemed to be long.

The respondents were further asked to express their views on the difference that they noticed in the household since the introduction of FBE. Almost 60% indicated that they do not see any difference, meaning that nothing has changed in the way that they lived in the household since the introduction of FBE, while just above 40% indicated that the extra 50 units that they are receiving are very helpful in a sense that they ended up spending less on electricity.

### 5.3.3. Officials' views with regards to FBE provision

As mentioned above in 5.2, views were sought from the officials and the councillors under various themes such as, the provision of FBE, challenges that are faced in FBE implementation, consultation process among the stakeholders, education and awareness, and tracking and compliance.

Overall sentiments that came out of these dialogues were that, as expressed by the households, the current rate of 50 kWh per month of FBE is deemed insufficient to

meet the households' electricity needs. There seems to be a challenge with the funding of the Free Basic Services resulting in variations in the provision of FBE depending on the revenue collection and the financial standing of a particular municipality. Indigent registers of the municipalities are not accurate and are updated on a yearly basis, which results in creating gaps in terms of benefiting on the subsidy. Meaning that the households that are not supposed to benefit end up benefiting at the expense of indigent households who end up not benefiting on time or even losing out on the subsidy. In this regard, the municipality officials pointed out to the issue of a lack of FBS dedicated staff resulting in a municipality outsourcing other services such as formulating and updating of indigent registers.

Absenteeism or poor attendance at community meetings by the members of the communities where pertinent issues such as accessing Free Basic Services are discussed, is attributed to the lack of awareness about FBE.

In terms of consultative relationships among the stakeholders, conflicting views were gathered, with some indicating that consultative meetings were being held with all the relevant stakeholders as per their schedules and the relations among stakeholders were favourable, while it was also indicated that the municipality FBS staff are not taken seriously by CoGTA and this further impact on monitoring and proper follow up. The issue of politicising these services by some councillors, depending on the political party affiliation, came up during the survey. Lastly, it was discovered that there were no systems in place in the municipalities to track the collection rate of FBE with the study noting that tracking is much needed. It was also noted that electricity vendors are also a contributory factor when it comes to FBE collection as they require the beneficiaries to first purchase before they could be issued out with their FBE tokens.

### 5.4. Recommendations made by the study

In light of the above findings made by this study, the following recommendations were made:

- **Rate of FBE** – due to an increased rate in rural electrification, indigent households are buying more electrical appliances. There is usually a large number of occupants in rural households which results in high consumption

patterns of electricity. Under these circumstances, the current monthly rate of 50 kWh needs to be revisited as it seems not to be a solution to energy poverty, doubling it may even go a long way into solving this problem. Furthermore, increased rate of FBE might play a role in even reducing the rate of tampering and illegal connections in these areas.

- **Indigent registers** – among other reasons why deserving indigents were not benefiting, bottlenecks in the municipality systems were cited, such as people who register but still have a lengthy wait before they can benefit. In this regard formulation and regular updates of indigent registers are very crucial in ensuring that deserving households do benefit from this subsidy. There should be a standardised process of updating registers. This should be done at least quarterly or twice a year. Yearly updates are lengthy, insufficient and prone to errors. Hence, updates that are more regular can ensure better monitoring and control thereby ensuring those that qualify are the ones that will receive FBE. There should also be a consideration of implementing effective IT systems that can handle the registration process (and other data capture processes). This can allow for data to be accurately captured, stored and analysed. Reports can be generated to provide updates to management and key stakeholders. This will allow management to get a 'real-time' view of the status of FBE provision at the municipalities. This system can also be used as a means of data 'cleansing' and accurate storage.

- **Tracking and compliance** - there should be systems in place to effectively track indigent households utilising or requiring FBE. In addition, compliance measures related to registers need to be in place. This can relate to the above point in utilising technology systems for tracking and registers.

- **Funding** – there should be strict measures when it comes to the equitable share that is coming through to the municipalities through National Treasury (NT), that it is spent purely on Free Basic Services and not anything else. This can help those municipalities that are struggling with revenue collection to keep

up the momentum when it comes to delivering Free Basic Services to their communities.

There should be consideration to process re-engineering of the payment process between Eskom and the municipalities. Perhaps Eskom could speed up the claims process whilst the municipalities should ensure that the 'committed amount' (FBE budget) is not spent on any other area. Committed amounts can be based on historical figures or estimates.

- **Dedicated personnel** - the role of adequate and dedicated personnel should not be underestimated. People and systems go hand in hand. Having the right capacity of staff dedicated to Free Basic Services can ensure that registers are updated timeously and queries resolved seamlessly which could lead to effective provision of these services.

- **Awareness and education** - whilst awareness and education seem to be happening quarterly and yearly via various forums, traditional imbizos, campaigns and workshops. Other creative forms of marketing can be considered especially for those indigent households that are still not collecting FBE tokens. Statistics should be developed reflecting collection/non-collection, which can inform stakeholders on areas that need attention. Perhaps personal household visits by the councillors and ward committees should be encouraged, informative and descriptive newsletters/pamphlets and other applicable communication methods can be used. Mobile workshops can be considered for those that cannot make it to forums and workshops (sometimes people cannot travel due to financial constraints).

- **Collective effort though proper communications and collaboration** - FBE should be seen as a collective effort between the management of the municipalities, FBE staff, service providers and the councillors. All of these role-players should be working in solidarity towards the provision of FBE to indigent people. Hence, there should be standardised methods of communication channels at each level. This needs to be in alignment with follow-up processes

between the necessary stakeholders e.g. CoGTA, municipality FBE staff, Eskom, electricity vendors, councillors, ward committees and CDW's.

- **Infrastructure** – DoE and NT through Eskom must ensure that the process of providing grid electricity in the rural areas is sped up and through CoGTA. They must also ensure that renewable energy such as Solar Home Systems (SHS) and other Free Basic Services are provided in those remotely situated areas.

- **Policy** - Despite the fact that municipalities draft their own IDP's, but when it comes to the provision of FBE, they must ensure that, they are in alignment with the national FBE policy. This will ensure that the municipalities are governed by one document that can guide implementation.

- **Research and Benchmarking** - Action research should be conducted at ground level to determine other solutions and ways to improve FBE implementation. Research can inform strategy, action and development.
  Benchmarking against other similar regions and even provinces can be done as a comparative measure to evaluate how they are managing the FBE process. This can inform other ideas.

## 5.5. Concluding statement

Both the lack of political will and the lack of leadership from the bureaucrats seems to be the main aspects that are doing a disservice in speeding up rural electrification programmes, which further impact on the FBE implementation in striving to alleviate energy poverty. Even though the research findings indicate that the problems that hinder effective implementation of the FBE policy are complex, a multi-stakeholder approach with the government leadership is required.

Service delivery protests are causing havoc throughout South Africa due to unfulfilled promises and corruption is rife both in public and in the private sector. The anger and the frustration expressed by these poor communities with regards to the challenges that they face in trying to access these services require urgent attention from all the relevant role players. Coming up with solutions to these challenges will not only deal with the issue of poverty but at the same time it will also serve as a tool towards resolving the issue of these countrywide service delivery protests that we are currently witnessing.

## REFERENCES

African National Congress. 2000. ANC Local Government Elections 2000 Manifesto. Available: http://http://www.anc.org.za/docs/manifesto/2000/ANC%20LOCAL%20GOVERNMENT%20ELECTIONS (Accessed 30 May 2017).

African National Congress. 2017. Economic Transformation Discussion Document. Paper presented at the 5th National Policy Conference. Gallagher Convention Centre, Midrand, 30 June - 5th July 2017.

Aitken, R. 2007. Household energy use: a comparison of household energy consumption and expenditure across three provinces. Journal of Energy in Southern Africa, 18 (1): 20-28.

Ballantyne, N. 2012. History and challenges of free basic electricity. In: Proceedings of Domestic Use of Energy Conference (DUE), 2012 Proceedings of the 20th. IEEE, 159-164.

Bekker, B., Eberhard, A., Gaunt, T. and Marquard, A. 2008. South Africa's rapid electrification programme: Policy, institutional, planning, financing and technical innovations. Energy policy, 36 (8): 3125-3137.

Bessis, S. 1995. From social exclusion to social cohesion: a policy agenda: the Roskilde Symposium, 2-4 March 1995. United Nations Educational, Scientific and Cultural Organization.

Blaikie, N. 2003. Designing social research: JSTOR.

Burns, A. 1999. Collaborative action research for English language teachers. Cambridge: CUP

Citizens United for Renewable Energy and Sustainability (CURES). 2009. Exploring Energy Poverty in South Africa: A CURES Discussion Document. Johannesburg: CURES Southern Africa Region. Available: https://www.cures.org.za (Accessed 20 April 2017).

Creswell, J. W. 2012. Educational research: Planning, conducting, and evaluating quantitative. Prentice Hall Upper Saddle River, NJ.

Creswell, J. W. 2013. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Davidson, O. 2002a. Sustainable energy and climate change: African perspectives. In developing energy solutions for climate change: South African research at EDRC. Cape Town: Energy and Development Research Centre: 145-152.

Davis, K. and Moore, W. E. 1945. Some principles of stratification. American sociological review, 10 (2): 242-249.

Denzin, N. K. and Lincoln, Y. S. 2011. The Sage handbook of qualitative research. Sage.

Department of Co-operative Governance and Traditional Affairs. 2015. Mbizana Local Municipality Draft Integrated Development Plan 2015–2016 Review. Bizana: Mbizana Local Municipality. Available: http://workspace.unpan.org/sites/internet/Documents/UNPAN95184.pdf (Accessed 20 April 2017).

Department of Co-operative Governance and Traditional Affairs. 2016. Ingquza Hill Integrated Development Plan and Budget 2016-2017. Flagstaff: Ingquza Hill Local Municipality, Available: http://www.ihlm.gov.za/category/documents/idp/ (Accessed 20 April 2017).

Department of Co-operative Governance and Traditional Affairs. 2017. Ntabankulu Local Municipality Draft IDP 2017-2022. Tabankulu: Ntabankulu Local Municipality. Available: http://ntabankulu.gov.za (Accessed 20 April 2017).

Department of Energy. 2008. National Energy Act 34 of 2008. Pretoria: South African Government.

Department of Energy. 2009. Socio-Economic Impact of Electrification. Available: http://www.energy.gov.za/files/media/explained/statistics_electrification_2009.pdf (Accessed 06 September 2016).

Department of Minerals and Energy. 2003. Electricity Basic Services Support Tariff (Free Basic Electricity) Policy. 25088. Pretoria: Government Gazette. Available: http://www.energy.gov.za/files/policies/policy_electricity_freebasic_2003.pdf (Accessed 20 May 2016).

Department of Minerals and Energy. 2007. Free Basic Alternative Energy Policy: Household Energy Support Programme. Pretoria: South African Government. Available: http://www.energy.gov.za/.../policies/Free%20Basic%20Alternative%20Energy%20Policy (Accessed 28 February 2017).

Department of Minerals and Energy. 2005b. South Africa National Energy Balance. Pretoria, DME. http://www.dme.gov.a/energy/pdf/Aggregate20balance%202001.pdf (Accessed 05 April 2016).

Department of Minerals and Energy. 1998. White Paper on Energy Policy of the Republic of South Africa. Pretoria: Department of Minerals and Energy.

Department of Provincial and Local Government. 1998. Local Government: Municipal Structures Act 117 of 1998. Pretoria: South African Government.

Department of Provincial and Local Government. 2005. Provision of Free Basic Municipal Services. Pretoria. South African Government.

Eastern Cape Planning Commission. 2014. Eastern Cape Vision 2030: Provincial Development Plan. Bhisho: Province of the Eastern Cape.

Energy and Development Research Centre. 2002. Options for a Basic Electricity Support Tariff Cape Town: University of Cape Town (UCT Report). Available: https://www.uct.ac.za/mondaypaper/archives/?id=2888 (Accessed 16 September 2016).

Eskom. 2015/16. Tariff and Charges Booklet. Available: https://www.eskom.co.za/tariffs (Accessed 20 August 2017).

Fahmy, E. 2011. The definition and measurement of fuel poverty. A briefing paper to inform consumer focus's submission to the Hills fuel poverty review, University of Bristol,

Fowles, P. 2004. Implementation of a free basic electricity allocation. Domestic use of energy, Cape Town, Cape Technikon: 23-29.

Hall, A. L. and Midgley, J. 2004. Social policy for development. Sage.

Hughes, A. Howells, M. & Kenny, A. 2002. Energy efficiency baseline study: Capacity building in energy efficiency and renewable energy (CABEERE) Report No. 2.3.4. Report No. P-54126. Pretoria: Department of Minerals and Energy.

Human Science Research Council. 2010. The People Matter: The state of the population in the Eastern Cape. Bhisho: Province of the Eastern Cape.

Hurst, C. E., Gibbon, H. M. F. and Nurse, A. M. 2016. Social inequality: Forms, causes, and consequences. Routledge.

International Institute for Sustainable Development (IISD). 2015. Available: http://www.iisd.org/topic/sustainable-development (Accessed 30 May 2017).

Ismail, Z. 2015. An Empirical Estimation of Energy Poverty in Poor South African Households. Journal of Economics and Sustainable Development, 6 (13)

Ismail, Z. and Khembo, P. 2015. Determinants of energy poverty in South Africa. Journal of Energy in Southern Africa, 26 (3): 66-78.

Jabareen, Y. 2009. Building a Conceptual Framework: Philosophy, Definitions and Procedure. International Journal of Qualitative Methods, Vol. 8 (4), pp. 49-62.

James, C. 2006. The place of Lester Ward among sociological classical. Journal of Classical Sociology, 6 (1): 5-21.

Kafle, N. P. 2013. Hermeneutic phenomenological research method simplified. Bodhi: An Interdisciplinary Journal, 5 (1): 181-200.

Kennett, P. 2006. A handbook of comparative social policy. Edward Elgar Publishing.

Kohler, M., Rhodes, B. and Vermaak, C. 2009. Developing an Energy-Based Poverty Line for South Africa. Journal of Interdisciplinary Economics.

Lincoln, Y. S. and Guba, E. G. 1985. Naturalistic inquiry. Thousand Oaks, CA: Sage.

Lloyd, P. 2014. Challenges in household energisation and the poor. Journal of Energy in Southern Africa, 25 (2): 2-8.

Long, T. 2007. What are the Ethical Issues in Research? In Johnson, L. & Long, T. (eds), Research Ethics in the Real World: Issues and Solutions for Health and Social Care. Britain: Elsevier Limited.

Louw, K., Conradie, B., Howells, M. and Dekenah, M. 2008. Determinants of electricity demand for newly electrified low-income African households. Energy policy, 36 (8): 2812-2818.

Mackenzie, N. and Knipe, S. 2006. Research dilemmas: Paradigms, methods and methodology. Issues in educational research, 16 (2): 193-205.

Makonese, T., Kimemia, D. K. and Annegarn, H. J. 2012. Assessment of free basic electricity and use of pre-paid meters in South Africa. In: Proceedings of Domestic Use of Energy Conference (DUE), 2012 Proceedings of the 20th. IEEE, 165-172.

Mandell, B. & Schram, B. 2003. An Introduction to human services: Politic and practice. New York, NY: Pearson Education Inc.

Mann, H. v. M., K. Peterson, L and Cosbey, A. 2005. IISD Model International Agreement on Investment for Sustainable Development. Winnipeg, Manitoba: International Institute for Sustainable Development.

Mapako, M. and Prasad, G. 2005. The free basic electricity policy and rural grid-connected households, solar home system users and un-electrified households. In: Proceedings of Proceedings Domestic Use of Energy International Conference. Citeseer, 29-31.

Marquard, A., Bekker, B., Eberhard, A. and Gaunt, T. 2007. South Africa's Electrification Programme–an overview and assessment. Management Programme in Infrastructure Reform and Regulation Graduate School of Business University of Cape Town,

Martens, D. 2005. Research Methods in Education and Psychology: Integrating Diversity with Quantitative Approaches: Thousand 0aks: Sage.

Marx, K. 1975. Economic & philosophical manuscripts of 1844.

Mbeki, T. 2001. Inauguration of the Executive Mayor of Tshwane. City of Tshwane.

McDonough, J. and McDonough, S.1997. Research Methods for English Language Teachers. London: Arnold.

Merriam, S. B. 1998. Qualitative Research and Case Study Applications in Education. Revised and Expanded from" Case Study Research in Education."

Mkandawire, T. 2004. Social policy in a development context. Springer.

Mohlakoana, N. 2014. Implementing the South African free basic alternative energy policy: a dynamic actor interaction. Universiteit Twente.

Momsen, J. H. 2004. Gender and development. Psychology Press.

Morris, T. 2006. Social work research methods: four alternative paradigms. Sage.

Mouton, J. 1996. Understanding Social Research. Pretoria: JL Van Schaik.

Mvondo, J. M. 2010. Impact of access to free basic electricity on households' poverty in Buffalo City Municipality in the Eastern Cape. University of Fort Hare.

National Electricity Regulator. 2003. Electricity Supply Statistics for South Africa 2003. Pretoria, NER. www.ner.org.za/publs.htm (Accessed01September 2016).

National Electricity Regulator. 1998. Lighting up South Africa 1997/1998. Sandton, Johannesburg.

National Energy Regulator of South Africa. 2016. Nersa Report on the National Free Basic Electricity (NFBE). Available: http://www.nersa.org.za/.../Electricity/.../NERSA%20report%20on%20the%20National%20 (Accessed 06 September 2016).

National Planning Commission. The Department in the Presidency. 2012. National Development Plan vision 2030. Pretoria: NPC.

Neuman, W. L. 2014. Social research methods: qualitative and quantitative approaches. Seventh; Pearson new international; ed. Harlow, Essex: Pearson.

Nunan, D. 1999. Research methods in language learning. Eighth printing. Cambridge: CUP.

O'Leary, Z. 2004. The essential guide to doing research. Sage.

Onwuegbuzie, A. J. and Collins, K. M. 2007. A typology of mixed methods sampling designs in social science research. The qualitative report, 12 (2): 281-316.

Rank, M. R. 2004. One nation, underprivileged: Why American poverty affects us all. Oxford University Press.

Rankin, B. H. and Quane, J. M. 2000. Neighborhood poverty and the social isolation of inner-city African American families. Soc. F., 79: 139.

Rieder, K. 2009. What are the main ethical considerations in social research? What can researchers do to ensure that a research project is conducted ethically? Available: https://www.essex.ac.uk/sociology/documents/pdf/ug_journal/vol3/2009SC203_KerstenRieder.pdf (Accessed on 29/05/2017).

Ruiters, G. 2011. Developing or Managing the Poor: The Complexities and Contradictions of Free Basic Electricity in South Africa (2000-2006). Africa Development, 36 (1): 119-142.

Sakamoto, A. 1990. The structure of social-stratification in the United States - Beeghley, L: AMER Sociological Assoc 1722 N ST NW, Washinghton, DC 20036-2981.

Sameti, M., Esfahani, R. D. and Haghighi, H. K. 2012. Theories of poverty: a comparative analysis. Kuwait Chapter of Arabian Journal of Business and Management Review, 1 (6): 55-56.

Schunk, D. H. 2008. Learning theories. Printice Hall Inc., New Jersey.

Sen, A. 2001. Development as freedom. Oxford Paperbacks.

Statistics South Africa. 2017. Census 2011. Pretoria: Statistics South Africa.

Strewing, F.W. and Stead, G.B. 2001. Planning, designing and reporting research. Cape Town: Maskew Miller Longman.

Sugrue, A. 2009. Exploring energy poverty in South Africa-a CURES discussion document. Midrand, South Africa: CURES Southern African Region,

Swart, D. and Bredenkamp, B. 2012. The challenge of addressing household energy poverty. In: Proceedings of Strategies to Overcome Poverty and Inequality Conference–Towards Carnegie III, University of Cape Town, South Africa, 11pp.

The Presidency. 2009. Medium Term Strategic Framework: 2009 - 2014. Pretoria: South African Government. Available: http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan035516.pdf (Accessed 30 April 2017).

Traianou, A. 2012. Ethics in qualitative research. Sage publications.

United Nations Energy. 2005. The energy challenge for achieving the Millennium Development Goals. Available: http://www.undp.org/the_energy_challengeforachievingthemillenniumdevelopmentgoals (Accessed 28 March 2017).

United Nations Energy. 2016. Sustainable Energy for All. Available: http://www.se4all (Accessed 01 June 2017).

Vienna Energy Forum. 2017. VEF 2017. Available: https://www.viennaenergyforum.org (Accessed 01 June 2017).

Waddams, C., Brazier, K., Pham, K., Mathieu, L. and Wang, W. 2007. Identifying fuel poverty using objective and subjective measures. Centre for Competition Policy. 7(11).

Willies, K. 2005. Theories and practices of development: 1st Edition. New York: Routledge

Willis, K. 2011. Theories and practices of development. Taylor & Francis.

Wilson, E. 2014. Energy equity: United Nations Sustainable Energy for All Initiative. International Institute for Environment and Development, 15

Winkler, H. 2007. Energy policies for sustainable development in South Africa. Energy for sustainable Development, 11 (1): 26-34.

Yin, R. K. 1984. Applied social research methods series Case study research: Design and methods.

Yin, R. K. 2003. Case study research: Design and methods. 3rd Edition. London: Sage Publications.

Yin, R. K. 2013. Case study research: Design and methods. Thousand Oaks, CA: Sage publications.

Zainal, Z. 2007. Case study as a research method. Jurnal Kemanusiaan.

Zohrabi, M. 2013. Mixed method research: Instruments, validity, reliability and reporting findings. Theory and Practice in Language Studies, 3 (2): 254.

ANNEXURE A

# QUESTIONNAIRE FOR HOUSEHOLD HEADS

**Exploration of the benefits derived from Free Basic Electricity programme in mitigating energy poverty and the impediments faced in its implementation in the Eastern Pondoland.**

Please tick √ the appropriate answer

## SECTION A: DEMOGRAPHIC INFORMATION

1. Gender

| | | |
|---|---|---|
| 1 | Male | |
| 2 | Female | |

2. Age Group

| | | |
|---|---|---|
| 1 | 16 - 25 | |
| 2 | 26 - 35 | |
| 3 | 36 - 45 | |
| 4 | 46 -60 | |
| 5 | 66 and above | |

3. Marital Status

| | | |
|---|---|---|
| 1 | Single | |
| 2 | Married | |
| 3 | Divorced | |
| 4 | Widow/er | |
| 5 | Cohabiting | |

4. Highest level of education

| | | |
|---|---|---|
| 1 | No schooling | |
| 2 | Primary | |
| 3 | Secondary | |

| | | |
|---|---|---|
| 4 | Matriculated | |
| 5 | Tertiary | |

5. Employment status

| | | |
|---|---|---|
| 1 | Unemployed | |
| 2 | Self-employed | |
| 3 | Permanent | |
| 4 | Part-time | |

6. Household income (R)

| | | |
|---|---|---|
| 1 | 0 - 300 | |
| 2 | 301 - 900 | |
| 3 | 901 - 1200 | |
| 4 | 1201 - 2000 | |
| 5 | ≥ 2001 | |

7. Number of household occupants

| | | |
|---|---|---|
| 1 | None | |
| 2 | 1 - 3 | |
| 3 | 4 - 6 | |
| 4 | 7 - 10 | |
| 5 | ≥ 11 | |

**SECTION B: Access to electricity and household usage**

1. Does your household have electricity?

| | | |
|---|---|---|
| 1 | Yes | |
| 2 | No | |

2. If your answer is 'yes' to Q. 1, for how long have the household had electricity?

| | | |
|---|---|---|
| 1 | 0 – 1 year | |
| 2 | 1.1 year – 3 years | |
| 3 | 3.1 years – 5 years | |
| 4 | 5.1 years – 7 years | |
| 5 | ≥ 7.1 years | |

3. If your answer is 'yes' to Q. 1, how do you access electricity?

| | | |
|---|---|---|
| 1 | I buy it | |
| 2 | I have a tampered/bridged meter | |
| 3 | Its disconnected | |

4. If you are purchasing, how much does your electricity token/s cost per month?

| | | |
|---|---|---|
| 1 | 0 – R50 | |
| 2 | R51 – R100 | |
| 3 | R101 – R300 | |
| 4 | ≥R301 | |
| 5 | Use FBE only | |

5. Is your electricity vendor within a walking distance or do you travel to it?

| | | |
|---|---|---|
| 1 | It's a walking distance | |
| 2 | I travel | |
| 3 | I do both | |

6. If your answer to Q. 5 is ‘travel’ or you ‘do both’, please specify the mode of transportation that you normally use to travel to your vendor_____
_____

7. If you travel to your electricity vendor, what is the estimation of your monthly travelling costs on electricity only?

| | | |
|---|---|---|
| 1 | 0 – R50 | |
| 2 | R51 – R150 | |
| 3 | R151 – R250 | |
| 4 | ≥R251 | |
| 5 | I don’t know | |

8. What appliances do you have?

| | | |
|---|---|---|
| 1 | TV | |
| 2 | Refrigerator | |
| 3 | Stove (2 or 4 plate) | |
| 4 | Iron | |
| 5 | Kettle | |
| 6 | Other | |

9. What does your household use electricity mostly for?

| | | |
|---|---|---|
| 1 | Cooking | |
| 2 | Lighting | |
| 3 | Space heating | |
| 4 | Ironing | |
| 5 | Other | |

**SECTION C: FBE and its impact (for electrified households)**

1. Does your household receive FBE?

| | | |
|---|---|---|
| 1 | Yes | |
| 2 | No | |
| 3 | I don't know | |

2. If your answer is 'no' to Q.1, do you know what FBE is?

| | | |
|---|---|---|
| 1 | Yes, I do | |
| 2 | No, I don't | |

3. If you know what FBE is and you do not receive it, please explain the reason/s.

_____

_____

_____

_____

_____

4. If you do receive FBE, how much do you get per month? Note: some people confuse units with monetary value, i.e. to them 50kWh = R50

| | | |
|---|---|---|
| 1 | 0 – 50 kWh | |
| 2 | 51 – 150 kWh | |
| 3 | ≥ 151 kWh | |

5. Is the amount of FBE you receive per month sufficient for the household electricity needs?

| | | |
|---|---|---|
| 1 | Sufficient | |
| 2 | Not sufficient | |
| 3 | More than sufficient | |
| 4 | I don't know | |

6. Please explain your answer to Q. 5

_____

_____

_____

_____

_____

7. How do you receive your monthly FBE token, please specify?

_____

_____

_____

_____

8. Do you notice any difference now that you receive FBE compared to when you were not receiving it?

| | | |
|---|---|---|
| 1 | Yes, I see it | |
| 2 | No, I don't | |
| 3 | I don't know | |

9. If your answer is 'yes' to Q. 8, what difference do you notice? (please explain)_____

_____

_____

_____

_____

_____

10. Are there any electricity/FBE awareness campaigns held in your area?

| | | |
|---|---|---|
| 1 | Yes | |
| 2 | No | |
| 3 | I don't know | |

11. If your answer is ‘yes’ to Q. 10, when was the last one held?

| | | |
|---|---|---|
| 1 | 0 – 6 months | |
| 2 | 7 months – 1 year | |
| 3 | 1.1 year – 3 years | |
| 4 | 3.1 years – 5 years | |
| 5 | ≥ 5.1 years | |

12. How did you hear about the FBE subsidy? ( please explain)

_____

_____

_____

_____

13. Do you have any advice in improving access to FBE?

| | | |
|---|---|---|
| 1 | Yes | |
| 2 | No | |
| 3 | I don’t know | |

If your answer is ‘yes’ to Q. 13, what advice do you have? (Please explain)_____

_____

_____

_____

_____

_____

_____

ANNEXURE B

# INTERVIEW SCHEDULE FOR MUNICIPALITY OFFICIALS AND WARD COUNCILLORS

**Exploration of the benefits derived from Free Basic Electricity programme in mitigating energy poverty and the impediments faced in its implementation in the Eastern Pondoland.**

Please note: This questionnaire is used for academic purposes only and the information provided by the respondent will be treated in strict confidence, and not passed on to any other user.

Municipality name:

_____

Capacity of the official:

_____

Interview date:

_____

1. Does the municipality provide free basic services to the indigent households?

   _____

   _____

2. If you do, which services does the municipality provide? (please specify)

   _____

   _____

   _____

   _____

3. With regards to FBE provision, kindly explain the criteria that is being followed by the municipality:

   _____

   _____

   _____

   _____

   _____

4. In your view, is the criteria mentioned above viable?

   _____

   _____

   _____

5. If not, what do you suggest the municipality do to make it viable or to improve it?

6. In your view, are there any other solutions/processes other than the one currently in use that can be adopted by the municipality in providing FBE? If yes, kindly explain:

7. How often does the municipality update its indigent systems/register?

8. In your view, is this update interval reasonable/suitable for both the municipality and the indigents? (please explain)

9. What is the monthly rate of FBE does this municipality provide?

10. In your view, does this monthly rate appropriate in meeting the indigent households' electricity needs? (please explain your answer)

11. Does the municipality have any systems in place to track the monthly collection rate of FBE? If yes, how is the monthly collection rate?

12. Does the municipality embark in awareness campaigns to educate communities about free basic services? If yes, how often does the municipality convene them?

13. What are other challenges that the municipality encounter in providing FBE to the indigent households? (please explain)

14. In your view, how can you explain the consultative process or working relationship between all the stakeholders involved in the provision of FBE?

15. If there are any deviations, what do you think can be done to correct those?

16. Do you have any other suggestions concerning the general provision of FBE?

ANNEXURE C

# INTERVIEW SCHEDULE FOR COGTA AND ESKOM OFFICIALS

**Exploration of the benefits derived from Free Basic Electricity programme in mitigating energy poverty and the impediments faced in its implementation in the Eastern Pondoland.**

Please note: This questionnaire is used for academic purposes only and the information provided by the respondent will be treated in strict confidence, and not passed on to any other user.

Name of the official:

_____

Capacity of the official:

_____

Interview date:

_____

1. Do all municipalities in the Eastern Cape provide FBE to the indigent households?

   _____

   _____

2. If the answer is 'NO' in Q.1, please explain the reason/s for the discrepancy.

   _____

   _____

   _____

   _____

   _____

3. Do all the municipalities that provide FBE throughout the province allocate the same amount to all the indigents?

   _____

4. If the answer is 'NO' to Q.3, please explain the reason/s for variations.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

5. What are some of the mechanisms that are in place in ensuring compliance from the municipalities in terms of FBE provision?

6. What is the set monthly rate (kWh) of FBE do municipalities provide or supposed to provide?

7. In your view, do you deem this monthly rate sufficient in meeting the indigent households' electricity needs? (please explain your answer)

8. In your view, are vendors and communities knowledgeable with regards to FBE collection or there is still some education that needs to be done?

9. Whose responsibility is it in educating communities and vendors about FBE?

_____

_____

10. Are there any mechanisms in place in terms of educating communities and vendors about FBE and if there are, in your view how viable are they? (please explain)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

11. In your view, how can you explain the consultative process or working relationship between all the stakeholders involved in the provision of FBE?

_____

_____

_____

_____

_____

_____

_____

_____

_____

12. If there are any deviations in the consultative process what do you think can be done to correct those?

_____

_____

_____

_____

_____

13. Are there any other challenges facing the stakeholders in terms of FBE provision? (please specify)

_____

_____

_____

_____

_____

_____

_____

_____

14. Do you have any other suggestions concerning the general provision of FBE?

_____

_____

_____

_____

_____

_____

_____

ANNEXURE D

**NERSA report on National Free Basic Electricity (NFBE) for the financial year 2015/2016**

**Policy issues On FBE implementation to DoE/NT, proposed mitigation and progress report**

| ***Challenges*** | ***Proposed Mitigation in 2014/15 Financial year*** | ***Progress report in 2015/16 financial year*** |
|---|---|---|
| 1. Ever since the introduction of EBSST policy in 2003, it has never been reviewed as it still makes the provision of 50 kWh. | • It was recommended by NERSA that the DoE must consider reviewing this policy and the adequacy of 50 kWh per month. | • DoE referred to the UCT report stating that the FBE policy was introduced with the intention of providing basic energy supply to the poor. 0<br><br>• Inflation rate and the current amount of FBE were considered. Based on those factors, it is insufficient to better any person's life, as the poor still rely on traditional sources of energy which have a negative impact on their lives.<br><br>• More consultation and study needs to be done in terms of reviewing this current amount of 50 kWh per month. |
| 2. The NFBE policy states that one of the alternative methods of self-targeting which involves households using on average less than a pre-determined amount of electricity (up to 150kWh) per month applying for the FBE allocation in 2003. | • Considering the amount of electricity as it has become more expensive, municipality have difficulties in identifying low income households as indigents which results in intended beneficiaries of FBE not benefiting. Stakeholders must consider introducing standardised criteria for identification of indigents for the purpose of FBE qualification. | • DoE indicated that few criterions were used to identify low-income households as indigent including the self-target approach; however, the results were not satisfactory.<br><br>• For the free basic services that the government provide to the target market, all the custodians of that particular source including SALGA and CoGTA must put their head together to come up with the criteria that is inter-linked to all. |

| | | |
|---|---|---|
| 3. Equitable share from the National Treasury (NT) is not a conditional grant and it must not be used for any other services rather than FBE for which it is intended. | • A recommendation from NERSA stating that NT should consider converting the equitable share to a conditional grant in ensuring that it is used for FBE as per the policy. | • The provision of FBE is part of the routine and ongoing work of the municipality and not a once off project, therefore it is funded as part of the local government equitable share. It is then the responsibility of municipalities to prioritise spending in their area to provide Free Basic Services.<br>• It also indicated that it encourages municipalities to adhere to government policies in implementing FBS. |

**Policy issues on FBE implementation to SALGA/CoGTA, proposed mitigation and progress report**

| ***Challenges*** | ***Proposed Mitigation in 2014/15 Financial year*** | ***Progress report in 2015/16 financial year*** |
|---|---|---|
| 1. No FBE allocation following a disconnection due to non-payment or electricity theft. | • NERSA recommended that FBE be rolled out to all the intended beneficiaries regardless of any circumstances. | • Some municipalities indicated that FBE must be given to all beneficiaries regardless of the status of their account.<br>• Some further indicated that even though electricity theft unethical, disconnection of electricity will occur for various reasons including non-payment of other services as many municipalities employ a consolidated account.<br>• The disconnection of electricity for non-payment of other services was implemented to ensure that a credit control mechanism is in place to effect a successful collection scheme for the municipality. |
| 2. The NFBE policy does not provide for accumulation of FBE if not collected on a particular month. | • NERSA recommended that SALGA/CoGTA | • So many opportunities that are available for the collection of |

| | | |
|---|---|---|
| | should advise the municipalities to allow FBE accumulation for at least a specified period. | • Even though the accumulation or banking of FBE is ideal, it would often be met with system challenges.<br><br>• NERSA should motivate on this proposal of three-month accumulation of FBE as opposed to a month or even six months.<br><br>• The introduction of 'online super vendors', facilitated the vending process in such that FBE tokens can be automatically sent to customers monthly, however this will be dependent on the technology and costs etc. as experienced by each municipality.<br><br>• The prepaid electricity management system does not allow FBE to accumulate for any period of time. It is neither practical, nor affordable to the municipalities. It could also be said that if a household is not collecting the tokens, the premises are probably not occupied.<br><br>• Some municipalities allow consumers to claim FBE retrospectively, although this is not encouraged due to the administrative burden and furthermore if customers do not claim FBE in a particular month, it is assumed that they might not be indigent.<br><br>• Some municipalities, even though they agree with the recommendation, also submit that beneficiaries must be encouraged to collect FBE on a monthly basis for ease of |

| | | |
|---|---|---|
| | | administration, especially at year-end to avoid accruals. |
| 3. The current FBE policy states that free units are supplied per stand. Now, the indigent customers living in complexes and multiple households are not covered, which leads to some of the intended households not benefiting from FBE. | • NERSA recommended that SALGA/CoGTA and Municipalities should devise a mechanism to ensure that the intended beneficiaries access FBE, irrespective of where they live. | • The municipalities only give FBE to beneficiaries whose application was approved. The main solution is to allow for multiple meters per property. However, policing of eligibility for FBE poses a problem.<br><br>• Allowing multiple meters in a stand might not necessarily solve the problem as the FBE threshold is allocated per stand and not on the number of deserving customers that live on that stand.<br><br>• Municipal accounts are raised according to the erf number and managing more than one household per erf (or stand) will therefore result in a situation where the erf will have to be treated in line with the accounts of sectional title unit schemes and this is obviously not acceptable in terms of the Municipal Property Rates Act, 2004 (Act No. 6 of 2004).<br><br>• Some municipalities do not support the recommendation, as a meter would have to be installed in each structure at a huge cost to the municipality. National Government only provides FBE services allocation through equitable share based on households (backyard dwellers are included as part of the household). |
| 4. FBE tokens collection | • NERSA recommended that SALGA/CoGTA should advise municipalities to introduce mobile | • Vending stations are accessible in most cases. It must be noted that there is a limit to the number of vending stations that any municipality can implement |

| | | |
|---|---|---|
| | sites and additional vending stations to avoid customers having to travel long distances to collect tokens. | due to funding and operational constraints.<br>• NERSA as a regulatory body must provide benchmarks on the optimal number of vending stations required based on the number of customers and optimal funding, this benchmark number can then be monitored for each municipality via the regulatory framework. Municipalities can then be monitored from a regulatory perspective for operating/or not within a benchmark.<br>• NERSA does not have the mandate on the implementation of FBE; it only deals with determination of Eskom tariffs.<br>• With the introduction of 'online super vendors', it will be possible for FBE tokens to be purchased via cell phones, including via SMS. While it brings about convenience, there are additional costs involved for such services. |
| 5. Some municipalities roll out more than 50kWh per month or use a blanket approach, which results in revenue shortfall within the municipalities, who then apply for higher tariffs to compensate for the shortfall. | • NERSA will monitor such municipalities to avoid this situation of rolling out more than 50kWh per month and using a blanket approach, which in fact undermines government policy objective. | • NERSA will continue to monitor such municipalities on an annual basis to ensure that no municipality applies for higher tariffs to compensate for the shortfall.<br>• Many municipalities have implemented varying amounts of FBE to cater for the needs of the communities. Higher FBE allocations were provided with the best interest of the people at heart.<br>• It is agreed that a standard 50kWh threshold be strictly |

| | | |
|---|---|---|
| | | enforced as a national policy. |
| 6. Most municipalities have a challenge of human capital such that there is no responsible person for FBE implementation. | • SALGA/CoGTA should advise municipalities to assign an individual who will be responsible for FBE related matters in the area. | • Most of the municipalities indicated that they have a person responsible for FBE. It is therefore accepted and supported that FBE is managed by a dedicated department/person/team to ensure proper operation and functionality.<br><br>• In some municipalities, the Chief Financial Officer (CFO) is responsible for FBE. It is suggested that FBE be a competency of a function in the municipality and not an individual. |
| 7. Eskom has a challenge of getting late payments from the municipalities for rolling out FBE, which result, to high interest charges. | • SALGA/CoGTA should advise municipalities to ensure that Eskom is paid on time to avoid unnecessary interest, as it has a negative effect on their financials. | • Municipalities make payments on time and they support the recommendation if Eskom should render accounts timeously. |

**Policy issues on FBE implementation to Eskom, proposed mitigation and progress report**

| ***Challenges*** | ***Proposed Mitigation in 2014/15 Financial year*** | ***Progress report in 2015/16 financial year*** |
|---|---|---|
| 1. The communication among the stakeholders is not sufficient leading to communities being not aware of the availability of FBE. | • NERSA recommends that Eskom should ensure that awareness campaigns are rolled out provincially and nationally to educate communities on the availability of FBE.<br><br>• NERSA recommends that Eskom should engage with municipalities on FBE awareness campaigns by | • Eskom indicated that it is in the process of persuading government officials via stakeholder forums and relentless efforts to proactively solicit support from relevant government stakeholders to educate communities on the availability of FBE.<br><br>• Eskom indicated that it has already started an internal initiative to improve efficiencies and a way of dispensing FBE (e.g. data clean-up exercises, deployment of more vending outlets in rural or remote areas). It also conducted two |

| | | |
|---|---|---|
| | attending municipalities' Imbizos and forums. | customer awareness campaigns with regard to FBE qualifying criteria and collection options. |
| 2. A lack of understanding between Eskom and the municipalities leads to Eskom's contracts/agreements (under which the service is provided and paid and which are set for supplying FBE on behalf of municipalities) not being signed on time because of the various challenges within the municipalities. | • NERSA recommends that Eskom, municipalities and CoGTA should engage to discuss the FBE contract earlier (six months), prior to the contract expiring. | • Eskom indicated that it is in the process of ensuring that there is an improved municipal payment level and reduced debtor days for FBE claims or accounts as this has a huge impact on municipal finances. |

**Policy issues on FBE implementation to DPE, proposed mitigation and progress report**

| ***Challenges*** | ***Proposed Mitigation in 2014/15 Financial year*** | ***Progress report in 2015/16 financial year*** |
|---|---|---|
| Same challenges as Eskom's in the Table above. | Same mitigation factors as Eskom's in the Table above. | Same progress report as Eskom's in the Table above. |