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HOW *JUST* IS JUST: FINANCING TRANSITION TOWARDS SDG-7 IN THE EASTERN CAPE, SOUTH AFRICA

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DINEO DLULANE

DLLJEA003

Supervisor:

Professor Abdul Latif Alhassan

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DECLARATION

I, **DJ Dlulane,** hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I authorise the University to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

Date: 15 July 2024

Signature: Signed by candidate

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LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
CE	Circular Economy
CSO	Civil Society Organisation
DBSA	Development Bank of Southern Africa
DDM	District Development Model
DFI	Development Finance Institution
DMRE	Department of Mineral Resources and Energy
DoE	Department of Energy
EEDSM	Energy Efficiency and Demand Side Management
$GtCO_2$	Gigatons of Carbon Dioxide
$GtCO_2e$	Gigatons of Carbon Dioxide Equivalent
IDP	Integrated Development Plan
INEP	Integrated National Electrification Plan
IPP	Independent Power Producers
IRP	Integrated Resource Plan
JET	Just Energy Transition
JET-IP	Just Energy Transition Investment Plan
JETP	Just Energy Transition Partnership
MFMA	Municipal Finance Management Act
MtCo2-eq	Metric tons of Carbon Dioxide equivalent
MW	Megawatt
NDP	National Development Plan
NERSA	National Energy Regulation South Africa
PPP	Public Private Partnership
REIPPP	Renewable Energy Independent Power Producer Programme

List of Abbreviations continued.

ABBREVIATION	DEFINITION
SALGA	South African Local Government Association
SANEDI	South African National Energy Development Institute
SASSA	South African Social Security Agency
SDG	Sustainable Development Goals
SHS	Solar System Households
SSEG	Small-Scale Embedded Generation
UK	United Kingdom
UN	United Nations

ABSTRACT

It is widely confirmed that the average annual global greenhouse gas emissions are at their highest and there is an immediate need to limit global warming to 1.5 °C. South Africa is ranked among the biggest sources of greenhouse gases as its economy is dominated by the use of fossil fuel with 80% of its power being generated from coal. The government made commitments to reduce its domestic carbon emission by 2030 whilst ensuring ***just*** pathways of transitioning to cleaner sources of energy. The United Nations's 2030 SDG7 seeks to ensure universal access to affordable, reliable, and modern sources energy and which is closely linked to the foundations of the National Development Plan adopted as South Africa`s development roadmap. At the heart of the Just Energy Transition (JET) framework lies the principles of equity, fairness, and accessibility to clean energy resources and the finance needed to transition to renewable sources of energy to strategically reduce the negative effects of climate change. It is against this background that this research sought to understand the socio-culturally shaped community attitudes and perceptions towards the JET framework and its long-term sustainable benefits. This research also explored the challenges faced by municipalities in funding initiatives for renewable energy and universal energy access in the Eastern Cape. Data was collected using semi-structured, open- and closed-ended questions and face-to-face interviews using both isiXhosa and English with 10 village residents and five municipal representatives across various municipalities in the Eastern Cape.

Using an interpretivism epistemology approach, the qualitative thematic analysis revealed that while climate change has negatively impacted livelihoods, communities did not know nor understand the JET framework principles or how to harness their indigenous knowledge as ***just*** pathways to strategically reduce the effects of climate change. There seemed to be a disconnect between community experiences and government initiatives, highlighting the need for enhanced community education and improved local government involvement in sustainable development dialogues, and clearer communication of government policies. Thematic analysis also revealed the financial challenges faced by the municipalities, varying from poor revenue collection, escalating debt, and high unemployment rates as well the lack of access to funding due to their poor financial performance and qualified audit reports. Lack of political will among local municipality representatives to embrace renewable energy initiatives was noted, and as a result municipalities failed to promote grassroots sustainable development, further exacerbating agency issues with electricity distribution and service delivery.

The research recommends community-driven grants funding to facilitate dialogues and education on renewable energy benefits and legal frameworks that ensure communities have a meaningful voice in decision-making processes integrating indigenous knowledge with modern sustainable technologies. National government policies need to align with local realities and needs, funding models need to be reformed to support community-driven renewable energy projects even for non-bankable projects.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The concept of the ***just*** transition was coined based on decades of transitions resulting from the regional relocation of industries due to economic reasons or the introduction of new technologies that resulted in either job creation or job losses. The concept was largely birthed as a result of labour unions, low-income workers, environmentalists, and communities seeking ***just*** pathways of transitioning to new ways of working in the growing the economy (World Future Council, 2023). Therefore, the ***Just*** Energy Transition (JET) is a gradual shift from the heavy reliance on coal or fossil fuel energy sources to more sustainable and renewable energy sources (Costas, 2022). The 2019 Emissions Gap Report indicated that 37.5 $GtCO_2$ of the 55.3 $GtCO_2e$ global greenhouse gas emissions in 2018 were due to fossil fuel combustion in electricity generation and other operations (United Nations Environment Programme, 2019). ClientEarth (2022) explained that the burning of fossil fuels releases greenhouse gas into the air which then traps heat in the atmosphere resulting in global warming. The Intergovernmental Panel on Climate Change confirmed that the average annual global greenhouse gas emissions were at their highest levels in human history between 2010 and 2019 and that there was an immediate need to limit global warming to 1.5 °C (Intergovernmental Panel on Climate Change, 2022).

Global warming has been cited as the cause of the rapid rate and magnitude of climate change resulting in severe droughts and wildfires as well as extreme rainfalls (Cook et al., 2015). These environmental changes impact human health and safety, food security, and socio-economic development particularly in developing countries within Africa. The United Nation's (UN) Sustainable Development Goals (SDGs) seek to mitigate these threats through structured strategies aimed at improving health, education, and economic growth and reducing inequality while also mitigating climate change (United Nations Development Programme, 2023). The Working Group III noted that a major transition in the energy sector would be required that includes substantial reductions in the use of fossil fuels while also ensuring widespread electrification and improved energy efficiencies. This would also require cognisance of financial flows as a major supportive factor in limiting global warming, with vast capital investments and global financial liquidity also required for global emission-reduction initiatives (Intergovernmental Panel on Climate Change, 2022). At a minimum, an annual investment in clean energy of approximately US$4 trillion is required to achieve net-zero emissions worldwide by 2050 (International Energy Agency, 2021), which will also require the close alignment of both public sector finance and policies (Intergovernmental Panel on Climate Change, 2022).

South Africa's Nationally Determined Contribution outlines the country's post-2020 climate strategy in accordance with its obligations under the 2015 Paris Agreement and aims to achieve a reduction of domestic carbon emissions to 350-420 $MtCO_2$-eq by 2030 and a net-zero carbon economy by 2050 (Costas, 2022). According to the 2021 Bloomberg Green Report, South Africa was ranked as the world's 12th-greatest source of greenhouse gases (Africa Check, 2021).

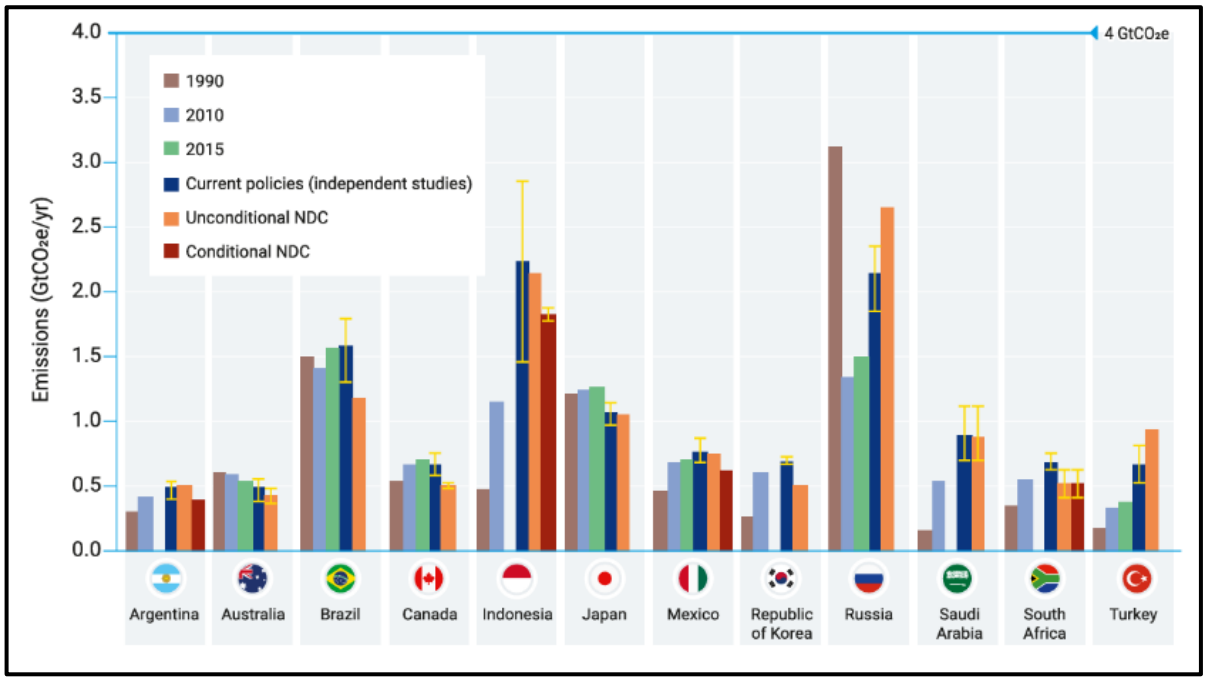

Figure 1. Emissions Gap Report 2019 – The G20 and its Individual Members.

Source: United Nations Environment Programme (2019)

Eighty percent of South Africa's power is generated from coal (Statistics South Africa, 2015). As a result, the economic activity of the country is primarily depended on fossil fuel, with coal mining as the leading mining commodity revenue generator for the country. In 2022, 90977 individuals were employed in the coal sector alone (Minerals Council South Africa, 2023). Therefore, the country may need to balance the negative impact of the reduction in gas emissions and energy transition on employment, the country's Gross Domestic Product, and the energy sector in general. In a 2021 summit-level meeting on energy, over 130 heads of state, government leaders, and other stakeholders met to discuss the implementation of the energy-related goals and targets of the 2030 Agenda for Sustainable Development, particularly the achievement of the SDG7: ensuring access to clean and affordable energy services for all by 2030, and accelerating the energy transition towards net-zero emissions by 2050 (United Nations, 2021). The dialogue emphasised that the global energy transition must be ***just***, inclusive, and equitable, ensuring that no one is left behind.

According to the World Future Council (2023), a ***just*** transition is a future-oriented concept that should be guided by the principles of sustainability and climate justice, where decisions made should benefit those most underprivileged. Project 90 by 2030 (2023) also highlighted that the ***just*** component of the transition is a very important concept that should seek to protect jobs at risk of becoming obsolete as a result of the transition from coal to renewable sources of energy. In 2020, South Africa's president, Cyril Ramaphosa, established the Presidential Climate Change Coordinating Commission (P4C) to develop a framework for a ***just*** transition towards clean energy in South Africa and to advise on the best mitigation and adaptation responses to climate change (The Presidency of the Republic of South Africa, 2022). After robust research and analysis, stakeholder engagements, community dialogues, and meetings, the commission published an evidence-based JET framework, officially submitted to the president on 5 July 2022 (Moodley, 2022). According to the JET framework, a JET in South Africa should seek to place people at the centre of decision making and should aim to achieve quality of life for all South Africans within the context of increasing the ability to adapt to the adverse impacts of climate change (Presidential Climate Commission, 2022b).

The World Economic Forum highlighted that a JET would require extensive financing, changes in technologies, jobs, domestically-developed skills, capacities, and expertise to support the transformational processes (Tasrif, 2022). South Africa would require funding of ZAR1.5 trillion over five years (i.e., 2023-2027) from multiple sources including developed countries, private sector investors, and Development Finance Institutions (DFIs; The Presidency of the Republic of South Africa, 2022). At the 27th Conference of the Parties held in 2022 in Egypt, South Africa signed an US$8.5 billion bilateral deal called the ***Just*** Energy Transition Partnership (JETP) with international partner groups including the United States, United Kingdom (UK), Germany, and the European Union (Presidential Climate Commission, 2022c). A condition of the JETP was for the South African Government to outline a five-year investment plan for financing its energy transition, which gave rise to the South African ***Just*** Energy Transition – Investment Plan (JET-IP; The Presidency of the Republic of South Africa, 2022). The international partner group funding comprised of grants, concessional and commercial loans, and guarantee instruments which would contribute to approximately 12% of the JET-IPs funding needs. These funds would be directed towards the decommissioning of coal plants, the expansion and strengthening of the electricity transmission grid, supporting economic diversification in affected coal mining areas, as well as for the continued roll-out of renewable energy (The Presidency of the Republic of South Africa, 2022).

The Eastern Cape Province is the second largest province within South Africa, with its economy predominately dependent on the automotive sector and potential in other industries such as chemicals and petrochemicals, agriculture and agro-processing, manufacturing, and green industries (Eastern Cape Office of the Premier, 2021).

The Eastern Cape local government is constituted by two metropolitan municipalities (i.e., the Buffalo City and Nelson Mandela Bay municipalities) and five district municipalities (i.e., the Alfred Nzo, Amathole, Cacadu, Chris Hani, and O.R. Tambo district municipalities). Due to its mix of urban and deep rural areas, the Eastern Cape Province is considered a developing state with limited resources; therefore, a co-ordinated public-private sector investment would be required to avoid inefficient and scattered development. The Eastern Cape Socio-Economic Council previously reported a 47.4% unemployment rate for the province (Statistics South Africa, 2021a), one of the worst in the country, with many families living below the poverty line.

More than 20 years post South Africa's democracy, many villages within the Eastern Cape still have no access to electricity due to poor infrastructure and municipal incapacity (Damba-Hendrik, 2023). As a consequence of apartheid, the majority of the labour force from former homelands such as the Eastern Cape had to "migrate" to mining towns, resulting in being double rooted in terms of having an urban residency, while their families and homesteads remained in these rural areas (Njwambe et al., 2019). With the impending scale down in coal production and the reduction in coal finance, migration to the Eastern Cape is likely to increase which may also exacerbate the levels of poverty and unemployment within the province.

District municipalities play a particularly important role in alleviating the worst forms of poverty and facilitating development within the rural communities that they serve. Renewable energy, in the form of wind and solar, offers great opportunities for both rural and urban communities (National Treasury, 2011); however, communities within the Eastern Cape remain on the back foot of sustainable development within the electricity sector, with no perceived lasting tangible benefit from these sustainability efforts. With the UN's 2030 SDGs looming, the wheels of renewable energy have turned, and the market has been flooded with alternative clean energy technologies.

The South African Government has implemented several policy reforms and opened international markets and alternative sources of funding to support municipalities with alleviating the pressure on the electricity grid. However, the financing of universal access and energy transition cannot be carried through the fiscus alone, and the ***just*** transition needs to ensure equitable and transparent access to, and use of, funding for the sustainable benefit of all citizens – leaving no one behind.

1.2 Research Problem and Questions

Schedule Four of the Constitution of the Republic of South Africa (the Constitution) makes electricity reticulation a municipal responsibility, while Section 214(1) requires that an annual Division of Revenue Act determine the equitable division of nationally raised revenue between national, provincial, and local governments.

Therefore, municipalities receive funding from the national government in accordance with the Division of Revenue Act of 2005. This funding is provided in the form of grants (conditional grants), which are fiscal transfers that are not required to be repaid but are often underpinned by conditions that they are used for defined or specific purposes (Vulekamali, 2023).

For example, the Municipal Infrastructure Grant is a conditional grant provided to municipalities with the specific condition that the funds are used for maintaining infrastructure. Section 227.1 of the Constitution states that municipalities are entitled to an equitable share of the nationally raised revenue to perform their allocated functions. The equitable share is an example of an unconditional grant that a municipality may use for purposes that fall outside the scope of improving basic services, such as spending on administration (Vulekamali, 2023). Sections 152 and 153 of the Constitution stipulates that a municipality must give priority to the basic needs of its communities and promote their social and economic development to achieve a democratic, safe, and healthy environment. Sections 28 and 34 of the Municipal Systems Act 32 of 2000 mandates every municipality to develop and adopt an Integrated Development Plan (IDP) that should be reviewed annually.

An IDP encompasses a municipality's goals and objectives for economic and social development in the short, medium, and long-term. Further, IDPs should outline strategies to manage municipal finances for the purpose of facilitating basic service provision, infrastructural development, improved spatial planning, and disaster management (Engcobo Local Municipality, 2020). In addition to being constitutionally mandated to provide equitable and sustainable services and to facilitate social and economic development, municipalities are required to effect change at grassroots level through their uniquely close connections to communities and local resources and infrastructure (Sustainable Energy Africa, 2022). There is a real opportunity for municipalities to play a leading role in facilitating the ***just*** transition towards low-carbon emissions by enhancing energy efficiency opportunities and promoting renewable energy projects while tackling socio-economic disparities (Windvoel, 2023).

1.2.1 Problem Definition

The Energy Research Centre at the University of Cape Town previously published phase one of its three-year research project aimed at monitoring, evaluating, and supporting non-grid energy service delivery in three remote rural areas within South Africa (UCT Energy Research Centre, 2004). This report measured the impact of Solar System Households (SHS) in the rural Eastern Cape based on results obtained from face-to-face interviews with 348 Eastern Cape households covering the areas of Bizana, Mount Ayliff, Flagstaff, Ntabankulu, Mount Frere, Matatiele, and Mount Fletcher (UCT Energy Research Centre, 2004). The report highlighted that many SHS-users were ambivalent about their solar system and felt a sense of alienation (lack of ownership) as a result of not being empowered on the use of the system and a lack of understanding of the technology.

As a result of the SHS fee-for-service model being the first of its kind in South Africa, various factors such as government policy, the specification of role players, allocation of responsibility, and the legal framework took time to develop, and service providers struggled to adapt due to the lack of clarity and coordination (UCT Energy Research Centre, 2004). Interestingly, some SHS were removed due to the unanticipated arrival of grid electrification in those areas. Instead of the systems complementing each other, they competed; with customers perceiving grid electricity as a superior option and municipalities not understanding the long-term benefits of off-grid technologies. The poor or uncoordinated participation of government, particularly local municipalities, in supporting the roll out of the initiative and the lack of understanding and ownership of the off-grid innovation by communities were major contributors to this initiative not achieving its desired outcomes.

According to a 2020 Spending Review Report prepared by Savings@work at the Government Technical Advisory Centre on behalf of the National Treasury, 14.8 million households have been connected to the grid over 19 years through grants from the Integrated National Electrification Plan (INEP; Madikane & Mokoena, 2020). This is a remarkable achievement; however, 3 million households remain with no access to electricity due to scattered settlements, typical of the Eastern Cape Province, and the unpredictability of supply due to network capacity constraints at Eskom, municipal aged networks, and the poor infrastructure conditions in many municipal areas (Department of Energy, 2019). Savings@work also conducted a five-year spending review on the Energy Efficiency and Demand Side Management (EEDSM) grant and reported that scant information was available regarding the over ZAR1 billion allocated to this grant, including what the funds were spent on, whether the energy savings initiatives were supported by an approved policy framework, or whether municipalities considered EEDSM a priority (Madikane & Motshegwe, 2021).

Since the 2010–2030 Integrated Resource Plan (IRP) was promulgated, several capacity developments have taken place (e.g., procuring renewable energy under the Renewable Energy Independent Power Producers Programme [REIPPP]) and several assumptions have changed (e.g., electricity demand projection, Eskom's existing plant performance, and innovative technology costs). These changes led to the 2019 review and update of the IRP, signed by the Minister of Mineral Resources and Energy on 17 October 2019 (Department of Energy, 2019). The 2019 IRP reiterated the need for a diversified energy mix that would reduce the reliance on a single or limited number of primary energy sources (Department of Energy, 2019). The plan outlined the critical role of municipalities in facilitating off-grid connections to poor households, as well as several innovative technologies that could benefit communities and improve municipal revenue streams. In June 2021, President Cyril Ramaphosa announced amendments to Schedule Two of the Electricity Regulation Act that increased the National Energy Regulation of South Africa's (NERSA) licensing threshold for embedded generation projects from 1 MW to 100 MW (South African Local Government Association, 2020b).

Small-Scale Embedded Generation (SSEG) refers to the installation of a generator by electricity customers on residential, commercial, agricultural, or industrial properties. The generator is connected to the customer's electrical network behind the electricity meter and is therefore embedded in, and synchronised with, the distribution network (South African Local Government Association, 2020b). A report titled "Status of Small-Scale Embedded Generation (SSEG) in South African Municipalities" noted growing numbers of municipalities permitting SSEG onto their networks (South African Local Government Association, 2020b). However, from this report it was concerning to note the low number of Eastern Cape municipalities that had transitioned, with only six municipalities permitting official applications for SSEG installation and only two of these adopting SSEG tariffs (South African Local Government Association, 2023).

Table 1. Provincial SSEG Uptake Summary.

	Number of municipal electricity distributors in province	Number of municipalities allowing SSEG installations	Number of municipalities with official application processes	Number of municipalities with SSEG tariffs	Estimated capacity (MW) of registered SSEG systems
Eastern Cape	22	6	6	2	10.7
Free State[3]	17	No data	No data	No data	0.0
Gauteng	9	4	3	2	129.0
Kwazulu-Natal	25	3	2	1	35.5
Limpopo	16	6	5	1	3.7
Mpumalanga	14	4	4	3	17.0
Northern Cape	24	9	4	3	4.4
North West	13	2	2	0	17.6
Western Cape	25	22	18	19	64.3
TOTAL	165	56	44	31	282.1
% of licensed distributors:		34%	27%	19%	

Source: South African Local Government Association (2020b).

A study commissioned by the South African National Energy Development Institute (SANEDI) in April 2022 uncovered untapped potential for a micro-digester sector to aid in both climate mitigation and the green circular economy. It found that this technology had multiple benefits for managing waste decomposition, reducing the volume of organic waste sent to landfills, and therefore reducing methane emissions at landfill sites. The study further reported that micro-digesters for biogas production were concentrated in public sector programmes in rural areas, where the primary source of waste was cow dung and food waste to provide clean cooking gas. It highlighted that micro-digesters may add value through community-based instalment (or pay-as-you-go) schemes that secures gas for generators, battery charging, lighting, and clean cooking (Newswire, 2022). The study identified several additional benefits suitable for the rural communities within the Eastern Cape. Interestingly, the study reported that South Africa's usage of this technology was low compared to other African countries.

At the time, South Africa only had an estimated total number of 350 small-scale biogas digesters installed compared to Kenya with over 14000, Uganda with 11000, and Ethiopia with 10000 (Newswire, 2022). The reasons for the low uptake may be attributed to a lack of information being filtered down by municipalities to communities to communicate its benefits. It is also my belief that the language and the manner of communicating these technologies and the associated benefits is not understood by the communities it seeks to assist.

Energy transition in the South African context cannot be divorced from the social justice principles of equity, inclusiveness, and fairness in the access and allocation of resources. Social justice is defined as both a political and philosophical theory of fairness between communities or individuals in societies, with equal access to wealth, opportunities, and privileges (CFI Team, 2020). Unfortunately, there is conflict between satisfying individual needs and rights and government priorities for economic growth (Kraal, 2018); therefore, energy justice should incorporate moral considerations in decision making regarding the distribution and development of energy policies. In a first iteration of a ***just*** finance transition in South Africa, Lowitt (2022) identified the need for a financial ecosystem to align lending and investment actions to government's environmental and social policies as well as the need for improved economic circumstances which includes increased community asset ownership.

The South African Government has expended trillions of public funding towards municipalities, created opportunities for alternative energy resources, and opened networking opportunities for municipalities and the rest of the world. However, to date, the performance of many municipalities continues to decline, with the office of the Auditor General highlighting several concerns regarding the state of performance and compliance by municipalities. The Auditor General noted "the lack of improvement in municipal outcomes is an indictment on the entire local government accountability ecosystem, which failed to act and arrest the decline that continued to be characterised by service delivery challenges in municipalities" (Auditor-General of South Africa, 2022). The report further noted that the Eastern Cape Province had "gone backwards" over the previous five years (Harper, 2022). Even though Schedule Four of the Constitution makes electricity reticulation a municipal responsibility, where electricity connections may not have been supplied during the apartheid years, municipalities often do not have the requisite technical capacity or funds to expand their reticulation systems to connect non-electrified households (National Treasury, 2021a).

Access to electricity is a basic human right, the renewable energy wheels have long turned, and advancements in technology have flooded the market with innovative sources of energy resources. Innovative funding alternatives have also been made available to municipalities, and government-backed grants and concessional loans have been made available for both grid infrastructure as well as for procuring off-grid energy resources.

Reporting from the World Economic Forum indicated that the price of solar power had deceased by over 80% since 2010 (Armstrong, 2021). This significant drop in energy prices should have increased the potential to scale up investments and production, providing an opportunity to reduce emissions and achieve economic growth, particularly for poor countries (Farmer & Lafond, 2016).

The Eastern Cape's economy grew 0.0% in the fourth quarter of 2020 (Statistics South Africa, 2021b), and should have been driven largely by government. Several villages within the Umzimvubu Local Municipality (near Mt. Frere) are still without electricity, while other villages in the Intsika Yethu Local Municipality (in the Cofimvaba areas) were still hopeful that they would receive access to electricity as promised by the municipality (Damba-Hendrik, 2023). The questions that the present study therefore seeks to answer are:

- How equitable, fair, and accessible (***just***) has the JET been perceived by local communities and companies for the deployment of sustainable sources of alternative energy within the Eastern Cape Province?
- What are the challenges faced by municipalities in mobilising funding to accelerate access to sustainable energy by 2030 within the Eastern Cape Province?

1.3 Research Objectives

This present study seeks to:

- understand the community voice and perceptions towards the JET framework and its long-term sustainable benefits for their communities; and
- explore the challenges faced by municipalities in mobilising funding for the JET initiatives for communities and industries within the Easter Cape and universal access.

1.4 Scope and Justification of the Study

During the consultation process of the revision of the 2019 IRP, a general proposal was made by local government that the IRP adopt a bottom-up approach with full involvement from local government (ownership). The Department of Mineral Resources and Energy (DMRE) confirmed that the suggestion could be considered for the following iteration of the IRP but also answered that following both approaches (i.e., top down and bottom up) had proven to be useful in other energy planning jurisdictions (Department of Energy, 2019). A further suggestion was for the 2019 IRP to be published in other languages to allow for participation by broader society, which the DMRE agreed to consider (Department of Energy, 2019).

During the Presidential Climate Commission's community and stakeholder engagement sessions held across the country, it was evident that even though communities understood the negative effects of climate change, they did not clearly understand the dynamics and details of what it would mean to achieve a ***just*** transition to low carbon as well as how best they could access skills and mechanisms to produce goods and services for the transition pathways (Presidential Climate Commission, 2022a). Earthlife (2022) noted that community members lacked clarity on the definition of the popular phrase of a "***just*** transition" and reiterated the importance of continued grassroots engagement to ensure that marginalised communities participated in decision making. In addition, community members sough clarity regarding how the US$8.5 billion climate finance deal would benefit communities and whether the funding was a loan or a grant (Earthlife, 2022).

The new district-based service delivery model (i.e., the District Development Model [DDM]) is another "innovation" adopted by the South African Government. The then Minister of Cooperative Governance and Traditional Affairs, Dr Nkosazana Dlamini-Zuma, highlighted that the model was based on the Intergovernmental Relations Framework Act 13 of 2005 which provided a framework for a coordinated and integrated alignment of developmental priorities and objectives between the three spheres of government (Staff Writer, 2021). During a panel discussion between government and private sector/industry held in March 2021, it was acknowledged that the DDM would require fiscal support to achieve its objective, which would need to have been supplied from central government and financial institutions, with the balance being sourced either directly or indirectly from municipal rates and taxes and regional private sector investors (Currie, 2021). In April 2021, a partnership between the Department of Cooperative Governance and Traditional Affairs and the UN in South Africa was launched in support of the implementation of the DDM in the OR Tambo District Municipality of the Eastern Cape (Department of Cooperative Governance and Traditional Affairs, 2021). The OR Tambo District Municipality towns (i.e., Mthatha, Coffee Bay, Port St Johns, Qumbu, Bizana, and Flagstaff) are some the province's least-developed areas. However, before the DDM pilot work could continue, the Eastern Cape Government dissolved the OR Tambo District Municipality following issues raised by the Auditor General, the Special Investigation Unit, and the National Treasury over corruption, maladministration, and irregular expenditure (Maghina, 2021).

The present study was not only intended to shine a spotlight on the failings of the Eastern Cape municipalities despite national government support, but also sought to emphasise that municipalities are at the coalface of communities and that any transition, ***just*** or unjust, would have a direct impact on communities at large as well as on local industries and businesses that drive the provincial economy.

Based on the background context and frameworks highlighted above, it appears that the national government is pouring water (funding) into broken buckets, as initiative after initiative fails to derive the required change in the Eastern Cape municipalities that are tasked with the critical responsibility of bringing resources to communities. It is my belief that additional government-driven models are not likely to bring about the required step changes without first understanding the root causes of the persisting challenges and allowing a space for community voices to be heard.

This study also sought to highlight that the top-down approach taken by government (i.e., national, provincial, and local) has not been effective, and to justify why the muted voices of the communities within the Eastern Cape municipalities are showing themselves in more destructive tendencies as a result (e.g., burning of municipal buildings and council houses, constant service delivery protests, non-payment of services etc.). It is envisaged that the findings and recommendations of this study will highlight that being poor does not equate to incompetence, and that communities can fully participate in decision making and improve their own lives in more sustainable ways when empowered. These findings may also provide valuable insights to other funding providers to intensify their efforts to work directly with communities of the Eastern Cape in a manner and language that they will understand, while partnering with government on the bigger picture imperatives of attaining the UN's SDG7 by 2030.

1.5 Organisation of the Dissertation

This dissertation will cover five chapters. Chapter One has already provided a detailed background of the JET concept and the urgent need to transition. It also introduced various government universal access programmes and policies which places these municipalities as key central institutions tasked with the responsibility of delivering sustainable initiatives and funding the energy mix in the Eastern Cape. This chapter also captured the municipal responses to these government initiatives and highlighted the management of the related public funds in the context of the universal access to affordable, reliable, and modern energy services in the rural Eastern Cape. An overview of advances in the energy mix and the pace of change required was outlined and indicated the gap in the current literature regarding the empowerment of communities through their own voices. The research questions and the study's objectives were also outlined. Chapter Two will present a review of various theoretical literature available on the area of community-led clean energy initiatives and community participation in the acceleration of access to clean and affordable energy resources. The chapter will also consider various conceptual theories explored in innovative sources of funding and innovative technologies fit for rural communities and the role that both municipalities and the private sector can play to support these community-led projects. Chapter Three outlines the research methodology used to approach and design the present study.

Chapter Four will present an analysis of the key findings, while Chapter Five will present a summary of the research study, including its limitations and recommendations that can be used for further exploration and/or implementation by interested parties.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter defines the key concepts relating to the energy transition journey in South Africa and how it connects to the sustainability goals. It covers the theoretical and empirical literature available on key concepts and the JET in the Eastern Cape by outlining the JET framework in the context of the defined features and aspects of public funding, industry and community participation, and the evolution of the renewable energy landscape towards the SDG for access to clean and affordable energy. It highlights the theories behind public goods, community ecosystems, and funding models for the transition to renewable and clean energy. This chapter also reviews the available empirical literature on equity, accessibility, and fairness of energy and finance transitions at a community level as well the effectiveness of public funding channels that seek to accelerate the energy transition in a ***just*** manner.

2.2 Definition of Concepts

Affordable and Clean Energy is highlighted through SDG 7 that seeks to ensure universal access to affordable, reliable, and modern energy. This goal, as part of the UN's 2020 SDG's, also seeks to enhance international cooperation to facilitate investments and access to clean energy which includes renewable energy, energy efficiencies, and cleaner energy technology (United Nations Development Programme, 2023).

Community Ownership is an act or right of mutual ownership or possession something by a group of people that live together (Skerratt & Hall, 2011). It promotes collaboration between stakeholders and communities and encourages shared responsibility and accountability among individuals within the community (Skerratt & Hall, 2011).

Just **Transition** is the practice and a process of ensuring that no people, workers, sectors of the economy, or counties are left behind in the evolution from a high to low carbon economy. It includes principles of respect and dignity for vulnerable groups, fairness in the use of energy, social dialogue, and democratic consultation with all relevant stakeholders (Intergovernmental Panel on Climate, 2023). A ***just*** transition also seeks to ensure that the benefits of a green economy transition are equitably shared. This concept links at least 14 of the 17 SDG's, drawing emphasis to SDG7 (European Bank, 2023).

Public Finance is the management of the country's revenue, expenditure, and debt load through various government and quasi-government institutions (CFI Team, 2022). It includes balancing the rights of citizens with societal needs through the administration of public funds, maintaining infrastructure, and the role of government in the economy (Alagidede, 2012).

Conversely, private financing comes from a pool of multiple investors, typically private lenders, who are willing to provide funding for the launch of a new product or a project that is able to produce a profit (Tatum, 2024). Public goods benefit all users and are available to others, while private goods are characterised by both concentrated benefits and costs (Wambura Marwa, 2022).

2.3 The Just Energy Transition (JET) Framework in South Africa

Taking advantage of the opportunities of the green economy and managing climate change related risks are the primary objectives of the JET framework, together with the goal of improving the lives of South Africans. The framework aims to place individuals at the centre of the climate change response by ensuring a ***just*** pathway that leaves no one behind (Presidential Climate Commission, 2022b). The focus is centred on a coordinated effort in developing a shared vision for the transition as well as policies to govern the transition-related effects (South African Government, 2020). The foundations of the JET framework are set on the NDP: Vision 2030 – "Our future – make it work," adopted in 2012 as South Africa`s development roadmap. The plan preceded the post-2015 development agenda of the UN 2030 Agenda for Sustainable Development and the African Union Agenda 2063. The plan also has a 74% convergence with the SDGs, prioritising job creation, the elimination of poverty, the reduction of inequality, and growing an inclusive economy by 2030 (Statistics South Africa, 2019). Various working groups were created by the National Treasury to focus on climate change and the financing of a sustainable economy. These working groups also focussed on exploring the possibilities for electric vehicles as well as setting roadmaps for the reformation of the electricity industry by specifically repurposing Eskom's assets (Presidential Climate Commission, 2022b). The National Treasury acknowledged that significant capital reallocation and the mobilisation of new financial resources (i.e., public, private, and blended finance options) would be required for addressing climate change and South Africa's development agenda (National Treasury, 2021b). The SDGs have the potential to notably accelerate the realisation of the NDP's vision by fostering greater policy coherence and reducing duplication and inefficiencies. Effective governance within local government has the potential to realise the aspirations of the SDGs for communities, households, and individuals, particularly to those who are at risk of falling behind. Therefore, the importance of scaling and accelerating the local implementation of the SDGs in municipalities across the country can no longer be over-emphasised (Statistics South Africa, 2019).

The principles of the JET framework place distributive justice, restorative justice, and procedural justice at the centre of decision making by encouraging industries to participate while ensuring community ownership and stewardship by fostering a participatory policy-making process (Presidential Climate Commission, 2022b). One of the most important characteristics of the UN 2030 Agenda is its universality, where the localisation of global goals and sustainability efforts play a significant role in the advancement of sustainable development.

Therefore, this means that local municipalities are better qualified to understand the needs and requirements of individuals, allowing better public service delivery by prioritising expenditures and effective governance as a key to ensuring a coordinated effort in achieving a JET (World Bank Group, 2022). The IDPs are the legislated primary instruments for local development planning. They play a critical role in ensuring that local government achieves their developmental agenda and fulfils their constitutional mandate. The alignment of the municipal plans with those at national and provincial level is therefore crucial (Parliamentary Monitoring Group, 2022).

2.4 Overview of Renewable Energy (RE) in South Africa

The South African Government inherited a huge backlog of unelectrified households, particularly in the Eastern Cape, as the previous regime did not prioritise the electrification of black South African's homes. The Electrification Programme was endorsed after 1994 as part of the government's Reconstruction and Development Programme initiative. In 1999, the government prioritised access to electricity through its rollout of the INEP to provide electricity to previously marginalised communities. The INEP is a programme under the DMRE with an objective to manage the electrification planning, funding, and implementation processes with the aim of addressing the electrification backlog to reach universal access (Madikane & Mokoena, 2020). The government funds and manages this programme via the National Treasury and other donors such as the KfW Development Bank of Germany and the European Union. It then tasked Eskom, the municipalities, and other service providers to connect poor households to the grid and source non-grid technologies using INEP grants (National Treasury, 2008).

In efforts to source additional funding, encouraging the use of different technologies for access to energy, and in bringing about improved coordination of the implemented plans, the government launched a new initiative called the "New Electrification Roadmap" that led to the birth of the 2010-2030 IRP which was promulgated in March 2011 (Department of Environmental Affairs, 2011). The 2010–2030 IRP was aligned to the country's long-term plan outlined in the 2030 NDP and identified the preferred generation technology required to meet expected demand growth up until 2030. It also incorporated government objectives such as affordable electricity, reduced greenhouse gas emissions, diversified electricity generation sources, localisation, and regional development (Department of Environmental Affairs, 2011). The South African Local Government Association (SALGA) supported the New Electrification Roadmap and reiterated that municipalities would need to invest in infrastructure as they were on the frontline in providing first-line response to disasters caused by the extreme weather events likely to become more frequent as a direct result of climate change (National Treasury, 2011).

The REIPPPP was established by the then Department of Energy (DoE) in conjunction with the National Treasury and the Development Bank of Southern Africa (DBSA) at the end of 2010. The REIPPPP is one of the South African Government's urgent interventions to enhance the country's power generation capacity. Its primary objective is to secure private sector investment for the development of new electricity generation capacity, thereby giving effect to the policy decision to diversify South Africa's energy mix, articulated in the 1998 White Paper on Energy Policy (South African Government, 2021). By mobilising private sector funding through the REIPPP, the National Treasury facilitated the shifting of green infrastructure investment off the national balance sheet and into the private sector (National Treasury, 2021b).

The REIPPPP was also designed to contribute to broader national developmental objectives such as job creation, social upliftment, and economic transformation primarily through the broadening of economic ownership. The Independent Power Producers' (IPP) Office was established with a mandate to implement this programme and achieve its broader objectives (Eberhard & Naude, 2017). The REIPPP progressed from Bid Window 1 (rolled out in 2011) to Bid Window 4 (in 2021) resulting in the procurement of close to 11904 MW, with solar and wind being the dominant projects (Green Building Africa, 2021). According to the 2019 IPP Office Report, a combination of equity and debt investment of ZAR209.7 billion was injected into the programme, 20% of foreign origin. Some 40134 jobs were created with approximately ZAR860 million contributed to socio-economic development initiatives (Department of Mineral Resources and Energy, 2019).

2.5 Overview of the Renewable Energy Landscape and Associated Attributes of the Sustainable Development Goal Seven in the Eastern Cape

The REIPPPP was established towards the end of 2010 under the DMRE to enhance South Africa's power generation capacity and secure renewable and non-renewable energy sources from the private sector. The first bid window for procurement of the REIPPP was approved in 2011, kickstarting a vibrant and competitive procurement process which attracted approximately ZAR193 billion in investment through 92 IPPs approved between 2011 to 2015 (Molelekwa, 2022). In 2015, the UN 2030 Agenda for Sustainable Development was adopted by South Africa through the White Paper on Renewable Energy. The NDP spoke directly to the SDG7 focus areas of access to electricity (and other clean forms of energy), the increased utilisation of renewable energy, and the promotion of energy efficiency (United Nations Development Programme, 2023). The Eastern Cape Province procured up to 95% of wind capacity in Bid Windows 1-4 under the REIPPPP through 17 renewable energy IPPs, attracting almost ZAR22.1 billion in investment share through the value of the projects structured and secured as local equity (Department of Mineral Resources and Energy, 2019).

Since the introduction of South Africa's REIPPPP in 2011, over 43% of the total wind capacity procured is in the Eastern and Western Cape regions, with the Eastern Cape having the largest number of wind projects in the country, with a value of almost ZAR20 billion (South Afrian Wind Energy Association, 2018). This was noted by the South Afrian Wind Energy Association (2018) in that "wind IPPs are largely located along the coastal regions of the Eastern Cape province, based on the strong wind flows along these shores." However, as indicated in Figure 2 below, the IPPs in the Eastern Cape are closer to the metropolitan municipalities (i.e., Nelson Mandela and Buffalo City), with the benefits going directly to these communities.

Figure 2. Location of Wind Power Facilities in the Eastern Cape including Bid Window 4.

Source: Daniel (2020).

The DoE's REIPPP policy framework requires companies to promote community development and a minimum 2.5% prescribed threshold for ownership by local communities (WWF, 2015). The Cookhouse Wind Farm was the first and largest wind farm award in 2011's Bid Window 1 of the REIPPP for the Eastern Cape. This was funded by the African Infrastructure Investment Managers, part of Old Mutual Alternative Investments, which enabled 25% ownership of the wind farm to be held by the local community through the Cookhouse Community Trust (Africa Infrastructure Investment Managers, 2018). The Kouga Wind Farm, situated between Oyster Bay and St. Francis Bay, established the Kouga Wind Farm Community Development Trust registered as a Public Benefit Organisation that spends a percentage of the Kouga Wind Farm's revenue on community development projects (Kouga Wind Farm, 2018). The Eastern Cape is large in area and has contrasting economic landscapes across the province, with the west faring better that the predominately rural east.

The southern area of the province, including Gqeberha and the Karoo, has farming, manufacturing, financial services, trade, and tourism and is supported by two ports – Coega and Port Elizabeth. The eastern side, however, is the least developed with mostly rural villages with underdeveloped infrastructure (Phillip, 2022). Due to the mammoth task of not only connecting households to the grid but also having to build and strengthen the new and existing networks in difficult to reach areas, the rapid growth of households, the lack of co-ordination amongst the implementing agencies, and the lack of funds from the fiscus, the INEP has been failing to attain most of its goals, resulting in a significant electrification connection backlog.

According a Statistics South Africa (2019) report, 56 local municipalities (43 being large rural municipalities) did not provide any electricity to their residents and relied on Eskom to provide the distribution function in their area. In a briefing session to the National Council of Provinces and the business development sector held on 7 March 2011, the DMRE (then named DoE) conceded that municipalities (particularly those in rural areas) needed additional guidance due to the lack of technical skills and delivery on the programme. One Eastern Cape municipality (i.e., King Sabata Dalindyebo Local Municipality) was sighted in the report to have received an allocation of ZAR34 million but had not used a single cent of the grant funding in the previous two years.

2.6 Financing for Transition Through Public Funding and Green Funds

The South African Government envisaged that it would require US$250 billion over three decades to transform its energy system, including supporting workers and communities that would be directly affected by the energy transition (Presidential Climate Commission, 2022b). The National Treasury had been instrumental in leading the incorporation of the ***just*** transition imperatives into the national budget; however, it acknowledged that significant capital mobilisation from both domestic and international public and private entities would be required (Presidential Climate Commission, 2022b). According to the community toolbox (Center for Community Health and Development, 2023), public funding in its simplest terms is funding that emanates from the treasury. The National Treasury is the custodian of the nation's financial resources, accountable to the nation to professionally execute its responsibilities, with the aim of promoting growth and prosperity for all (South African Government, 2014).

Conditional grants have been used in South Africa to transfer funding to provinces and municipalities for the purpose of achieving national government policy objectives. In addition to conditional grants, local government and provinces are entitled to "an equitable share of revenue raised nationally." The Conditional Grant Frameworks are published as annexures to the Division of Revenue Bill, and gazetted once the act has been signed into law. These frameworks set the procedures for how funds can be used and supports the administration and oversight of conditional grants (South African Government, 2014).

The Division of Revenue Bill includes the value of grants for the budgeted year and projects grant values for the Medium-Term Expenditure Framework period (Vulekamali, 2023). The government's programme of action reflects its strategic plan in the Medium-Term Strategic Framework that is the implementation phase of the NDP.

The government also uses the DBSA to promote economic growth and regional integration by mobilising financial and other resources from the national and international private and public sectors for sustainable development projects and programmes in South Africa (The Development Bank of Southern Africa, 2019). The DBSA is wholly owned by the South African Government and a percentage of its profits is allocated towards development grants and non-financial investments in support of the sustainable development of local municipalities. A National Climate Change Response Policy White Paper was published and adopted prior to the 27th Conference of the Parties to the UN Framework Convention on Climate Change held in Durban in 2011 (Eberhard & Naude, 2017). A national fund, the Green Fund, was established in 2011 as complementary to the existing fiscal allocations which focussed on providing finance for investment in innovative green projects to support South Africa's transition towards a green economy and cover the funding gap. The fund was managed by the DBSA with an initial ZAR1.1 billion in funding from the National Treasury accessible to applicants including local and district municipalities (The Development Bank of Southern Africa, 2019). Green funds are mutual funds or other types of investment vehicles that promote socially and environmentally conscious policies and business practices. Within South Africa, the green fund was established to support the transition to a low carbon and climate resilient development path which would have an economic, environmental, and social benefit (The Development Bank of Southern Africa, 2023).

The South African Government also drives the growth and sustainability of small businesses by providing development funding through various forms including grants, tax incentives, loans, and equity finance options. As one of the key channels through which government funding reaches communities, DFIs all have an opportunity to improve the quality of life of South Africans (Government Communication and Information Systems, 2011). In November 2022, the World Bank Group approved a US$497 million project to decommission Eskom's 56-year-old Komati coal-fired power plant, repurpose it with renewable energy and batteries, and create opportunities for workers and communities. The funding breakdown comprises of a US$439.5 million World Bank loan, US$47.5 million concessional loan from the Canadian Clean Energy and Forest Climate Facility, and a US$10 million grant from the Energy Sector Management Assistance Programme (World Bank Group, 2023). Within the private sector, Nedbank also launched an innovative SDG-linked instrument listed on the Green Bonds segment of the Johannesburg Stock Exchange. The launch of this bond builds on the bank's previous renewable energy green bonds created in partnership with the African Development Bank, providing significant financial support to the SDGs, particularly SDG7 (Nedbank, 2019).

2.7 Public-Private Partnerships

South Africa has a well-established, legislated, and highly developed public-private partnership (PPP) that is backed by the Public Finance Management Act of 1999, Treasury Regulation 16, and the Municipal Finance Management Act of 2003 (MFMA). A unique and at times controversial feature of these legislations is the Black Economic Empowerment compatible key objective, set to alleviate racial inequality within South Africa (Commonwealth Governance, 2023). This key objective is also part of the criteria for the REIPPPP, where all projects are required to contribute to economic and socio-economic development in areas where renewable energy projects would be built, as well as procuring and sub-contracting to local large, medium, and small enterprises (SAFacts, 2023).

A study conducted by Mashwama et al. (2018) examined the effectiveness of PPPs in delivering infrastructure projects and reported that the PPPs increased the projects effectiveness by ensuring they were completed on time, with greater cost transparency and cost savings. The study suggested that PPPs should be entrenched as a traditional method of constructing infrastructure projects. Applying insight from agency theory, a study conducted by Nduhura et al. (2020) assessed the role of stakeholders in traditional procurement and PPPs and reported that the value outcomes of procurement and the use of PPPs lied in citizen co-production and co-delivery of public services as well as public participation. The study concluded that citizens were not always adequately engaged in these processes and advocated for an extension of the agency theory to give rise to a citizen principal agent theory. Liu et al. (2021) used an evolutionary game theory to explore the behavioural strategies of private sectors from the perspectives of green energy generators and sellers. It sought to investigate and analyse the willingness of the private sector participation in green energy PPP projects that are supported by government. The study reported that higher social and environmental benefits, subsidies, and cooperative incentives effectively affect stakeholders' strategies and increase their willingness to participate in Green Energy PPP projects (Liu et al., 2021).

2.8 Theoretical and Conceptual Framework

The present study is premised on the social capital and circular economy (CE) theories which are explained below in the context of the ***justness*** of the energy transition and the financing thereof. However, this study also acknowledges that the principal-agent theory tends to underpin both the governance structure within South Africa and the PPPs in infrastructure development as seen through the REIPPP and INEP in driving social capital and the circularity of the economy at community level. The shared value theoretical concept is also highlighted to frame community development and the sustainability of accessibility and ***just*** energy equity against the self-interest behaviour of both the political landscape and profit-driven private sector within South Africa.

2.8.1 Social Capital

Social capital is a set of shared values that allows individuals to work together in a group to effectively achieve a common purpose (Claridge, 2004). Social capital is the network of relationships among people who live and work together in a society (Lexico, 2020). The concept dates to the 18th century and is rooted in economics, sociology, anthropology, and political science with a central proposition of "relationships matter" in ensuring that modern societies function efficiently (Claridge, 2004). South Africa is a multinational state which uses socio-economic policies to advance the development initiatives of the country. Social capital holds out the promise of improving access to resources among and across different groups (Bayat, 2005). Bayat (2005) suggested that social capital should be viewed from two angles, the structural dimension (which is the social interactions) and the cognitive and attitudinal dimension (which predisposes people to act in a socially beneficial way), with trust falling under the cognitive and attitudinal dimension.

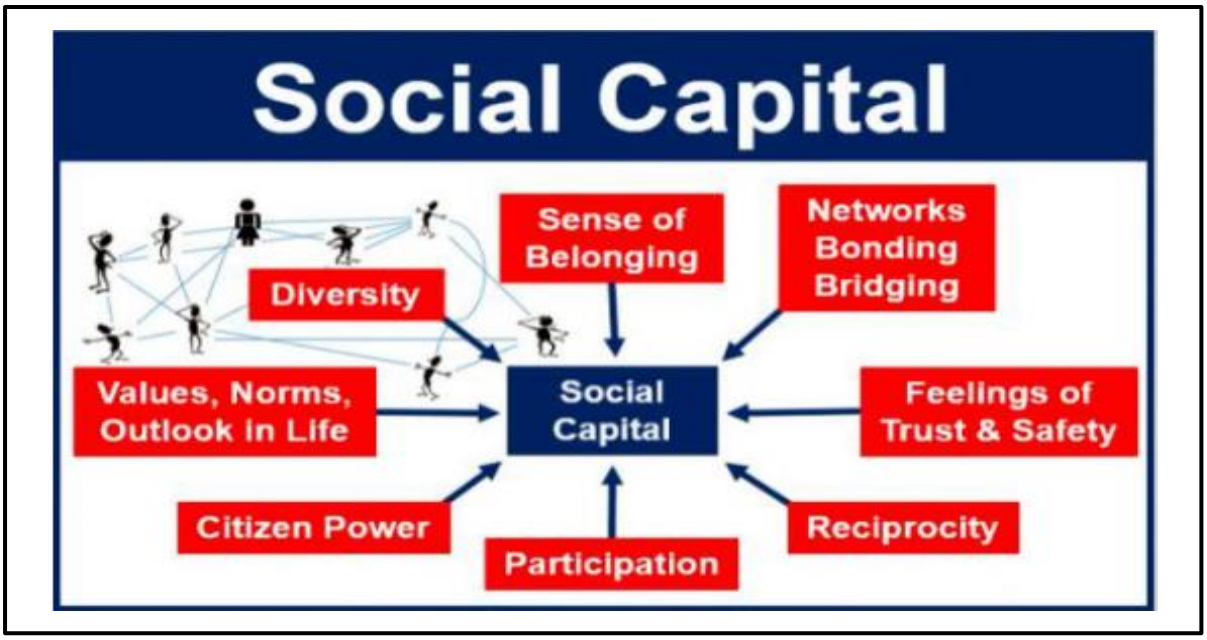

Figure 3. Social Capital.

Source: Market Business News (2023).

2.8.2 Circular Economy

A central theme of the CE concept is the valuation of materials within a close-looped system with an aim to allow for natural resource use while reducing pollution or avoiding resource constrains and sustaining economic growth (Winans et al., 2017). The CE may influence policy and innovation within South Africa as has been witnessed in economies such as China, Japan, and the UK. It is also said that without an evaluation framework or bottom-up support from the community, CE initiatives are not sustainable (Winans et al., 2017).

In a study conducted to examine the relevance of the CE approach to the achievement of the SDG's, Schroeder et al. (2019) reported the potential contributions of CE practices to the SDG targets and a strong relationship and synergies between the CE practices and SDG7.

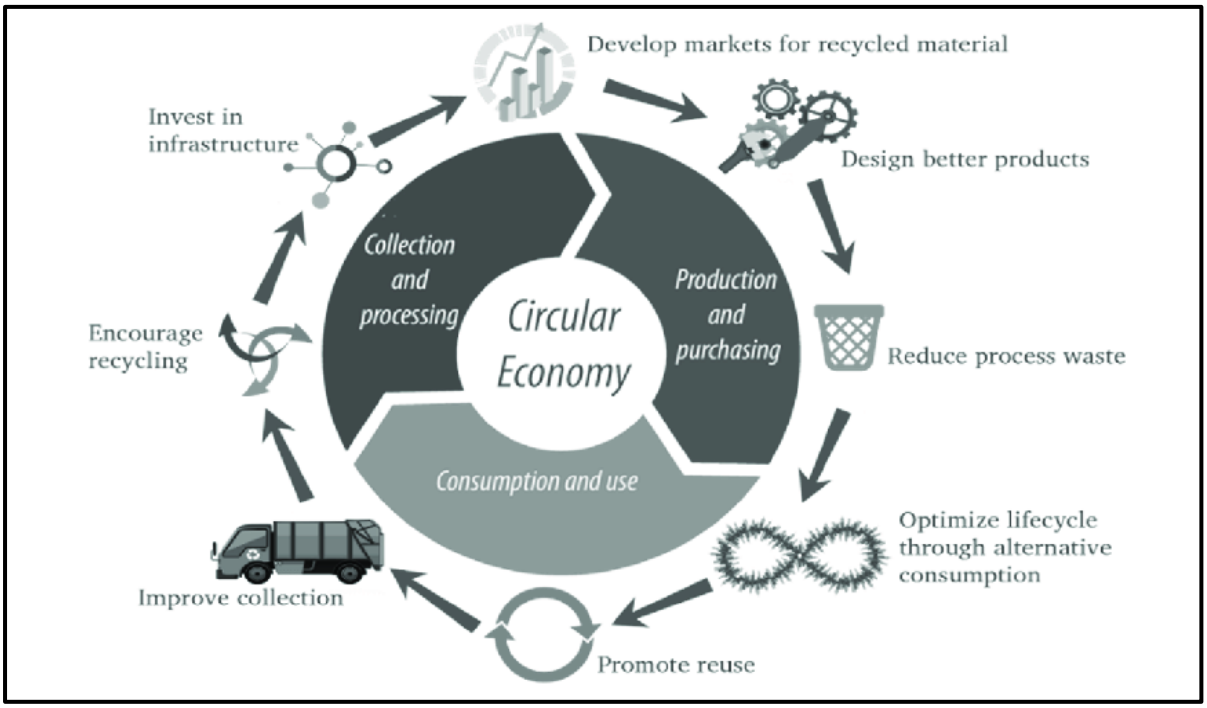

Figure 4. The Circular Economy.

Source: Barbaritano et al. (2019).

Renewable energy provides Eastern Cape businesses with a new growth opportunity considering its potential to supply 60% of the province's energy needs. The province has been on a drive to diversify the economy over the past five years, after it became apparent during the global economic crisis that dependence on the automotive sector and its exports made it vulnerable to pressures in the global economy. The Eastern Cape achieved 1073 MW from wind and solar farms in the first three rounds of the REIPPP (Pennington, 2023). Rural municipalities have been primarily focussed on providing alternative energy sources such as paraffin, fire gel, and candles; however, biomass technology may prove to be the most effective energy technology implemented in rural areas. The concept of biomass to energy is still in its infancy in South Africa but holds promise for future sustainable development. Biomass is regarded as any carbon-based material such as animal and human waste, plant material, food waste, algae, and industrial waste such as reclaimed woody material comparable to planks, etc. which when processed can produce organic fuels (Department of Forestry Fisheries and the Environment, 2023). Judging by the levels of complaints from citizens regarding the filth in their towns, municipalities can capitalise on this innovative technology to spearhead sustainable development using waste to generate energy. In a newspaper story, the residents of the town of Lusikisiki complained of piled-up rubbish in the streets that the municipality continued to ignore (Nocuze, 2016).

The SDGs are recognised as the blueprint for global development until 2030, and the CE advocates for an economic system that dissociates environmental pressure from economic growth through the replacement of linear production for circular production where waste becomes a resource. The CE has been considered as one of the most promising avenues to steer the transitions needed to achieve the SDGs, particularly SDG7 (Belmonte-Ureña et al., 2021).

2.8.3 Shared Value

Local economic development in South Africa is an approach geared towards economic development that allows and encourages locals to work together to achieve sustainable economic growth and development thereby bringing economic benefits and improved quality of life for all residents within a local municipal area (du Plessis, 2023). Community-driven development is a modality of project design and delivery which transfers decision-making power, and often financial and technical resources, directly to communities or groups of end-users (Holmlund & Rao, 2021). It is frequently used to deliver basic services, construct and maintain local public goods and infrastructure, maintain common property resources, and plan and manage community budgets (Holmlund & Rao, 2021). Porter and Kramer (2011) described shared value as policies and operating practices that enhance the competitiveness of a company while advancing the economic and social conditions in the communities within which it operates. They also highlighted that government should incentivise businesses for the creation of shared value and increased regulation in order to limit exploitation and unfair and deceptive business practices that harm society (von Liel, 2016). Concentrating decision making and management power locally within the community may serve as a means of better aligning development interventions with community needs and preferences, while countering state weakness in service delivery by harnessing social capital.

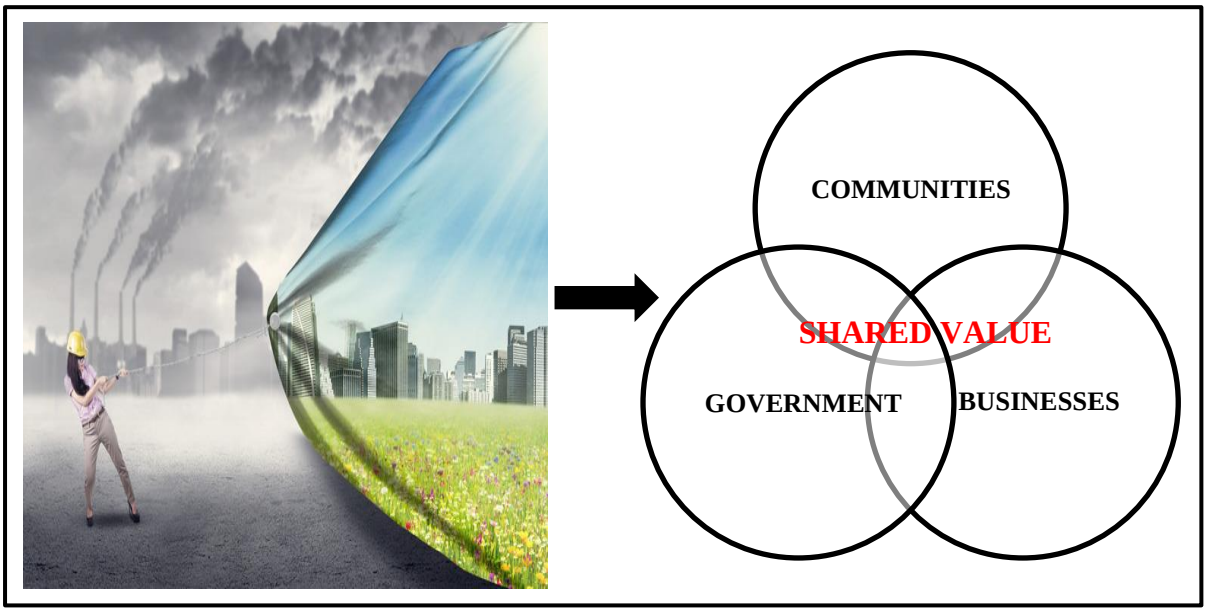

Figure 5. The Just Energy Transition and Shared Value.

2.8.4 Principal-Agent Theory

A principal is a person or institution that hires an agent to act on its behalf, and an agent is a person who acts on behalf of the principal (Kabinga, 2023). The principal therefore engages the agent to perform services on its behalf. An example of this is the South African Government and Eskom as a provider of electricity, or the South African Government structure that delegates its authority down to municipalities or districts to provide services, or where a private company is contracted to provide public goods. The terms of the contract or relationship between the principal and agent may have implicit terms about how the principal expects the agent to behave. However, due to a lack equivalent information between the parties, unequal capacities, or corruption, information asymmetries may arise (Kabinga, 2023). Information asymmetry is when an informed party benefits at the expense of a second party with less information (CFI Team, 2023).

2.9 Review of the Empirical Literature

2.9.1 Transition Finance, Public Funding, and Social Capital

The Trade and Industrial Policy Strategies research organisation defines ***just*** transition finance as financing that is focused on societal and developmental goals for those primarily impacted by climate change, while defining climate finance as relating to the decarbonisation of the economy including mitigation, adaptation, and resilience (e.g., investments into renewable energy, electrical vehicles, and green hydrogen; Lowitt & Makgetla, 2021). The researchers suggested that financing should be separate and specific with the development of ringfencing mechanisms, funding instruments, and schemes to ensure transparency and minimise the misalignment between the ***just*** transition projects and the existing financial ecosystem (Lowitt & Makgetla, 2021). Inference is also made in the research that the financial ecosystem of South Africa was largely designed, even at a systemic level, for the mining industry. A study conducted by Green Cape and the Bertha Centre indicated that most of the funding available in South Africa has been directed to projects that are already well developed, with low-risk profiles and predictable financial returns (Arnoldi, 2021). Lowitt and Makgetla (2021) further highlighted that grant funding within South Africa was hard to come by due to the limited fiscal environment the government operates in, to the extent that even DFI's within the country do not issue meaningful concessional funding as the government is unable to underwrite their losses (Lowitt & Makgetla, 2021). As a result, there has been a failure to provide early stage, small-scale, and high-risk finance. The International Finance Corporation collated information from various business sectors and compiled a report that outlined that a lack of finance or access to financing was the biggest challenge for micro-, small-, and medium-enterprises and that small business owners resorted to personal loans to start their businesses (Maylie, 2020).

The Institute of Development Studies noted that the literature focussed on the Green Climate Fund as the best option for financing local Civil Society Organisations (CSOs). However, the study also reported that the complexity, cost of accreditation, and complicated project approval processes were the main barriers to CSOs accessing these multilateral climate funds (Price, 2021). Roberts (2023) urged philanthropic capital to step in where fiscus was unable to do so, and suggested several policy instruments and funding mechanisms to assist government to facilitate local and smaller projects that included blended finance models such as grant funding to de-risk investment opportunities as well as unlock financing (Roberts, 2023). Another innovative funding mechanism would be for government to directly fund ***just*** transition projects through special purpose vehicles and innovatively structured transactions (Lowitt & Makgetla, 2021).

Fraser (2021) used statistical models and qualitative case studies to investigate why certain towns host more renewable energy power than others. The article argued that bridging social capital (i.e., policies for Black Economic Empowerment) acts as an obstacle in South Africa and that better opportunities for public participation in renewable energy may improve South Africa's success in ***just*** transitioning to renewable energy. The article also reported that communities with a high density of isiXhosa-speaking residents tend to adopt fewer solar forms and lower voter turnout. Fraser (2021) also highlighted that solar siting may be rare in communities where local political authorities have large control over ownership. The study concluded by suggesting that communities should utilise their bridging social ties at the ballot box to pressure local officials. While Fraser (2021) made strong points, they did not emphasise the use of an indigenous language to advance the clear understanding of the benefits of renewable energy. It is my belief that the benefits of renewable energy and advances in these SDGs are not clearly understood as explained and articulated in a foreign language to that spoken in these communities.

Attracting foreign capital using financial instruments that support sustainable and renewable energy initiatives is important in creating a ***just*** transition ecosystem (African Development Bank Group, 2022). The nature of capital flow into South Africa has varied throughout history with shifts from foreign direct investment and investment in public sector bonds, to investment primarily in private companies (Makgetla, 2013). Financial instruments such as green bonds for clean energy and renewable energy and social bonds (gender linked) have attracted demand in South Africa which indicates some appetite for these instruments from investors (African Development Bank Group, 2022; Intellidex, 2024). This suggests that governments could also issue sovereign bonds whose proceeds would be directed to ***just*** transition priorities which would then signal the importance of the ***just*** transition to financial markets.

While the changing faces of public funding towards municipalities seeks to improve the livelihoods of South Africans, innovative financial instruments could assist South Africa in considering alternative funding models specifically geared towards municipalities in rural areas where the rates of unemployment are high and where municipalities are not financially sustainable and rely heavily on government support or grants as their income streams.

A study conducted by the Asian Development Bank Institute reported that if local municipalities were to be properly designed, they may function as a mechanism to create circular financial flow where profits from electricity sales and the associated financial benefits of renewable energy supply remain in communities to form a shared stock for residential benefit (Peimani, 2018). However, mismanagement and corruption at the local government level within South Africa remains a huge obstacle unless a paradigm shift can occur. The motivation of mayors to support renewable energy may serve as a key success factor for local municipalities to transition to 100% renewable energy. Busch and McCormick (2014) emphasised that mayors should think about the good of their municipalities by shifting the focus from communicating climate change mitigation to the co-benefits that ambitious renewable energy policies can bring to a community.

Summary: There is a general acknowledgement that the South African fiscus will not be able to adequately fund transition to cleaner sources of energy in the pursuit of the reduction of carbon emissions. It was also highlighted that there are several barriers to entry and the accessibility of green or climate funding. While certain research advocates for and recommends strong CSO involvement in decision making, there is a general lack of emphasis on the role of language and the elevation of indigenous knowledge in engagements and recommendations. It is my belief that the complete transition and adaptation landscape is highly scientific and technically worded, using terms that may not be clearly understood by local communities. South Africa is fortunate to have a constitution that accepts the use of 11 official languages; however, most of the published research and announcements on the adaptation plans are articulated in English using overly technical language. The role of language, culture, and indigenous knowledge may prove to be beneficial to both government and the private sector when exploring innovative funding mechanisms that will reach local communities.

2.9.2 Community Ownership and Sustainable Development

A qualitative research study conducted by Franco and Tracey (2019) reported that improving community capacity-building priority areas aligned with the SDGs was the most effective strategy to enhance the ability of local communities to overcome sustainability challenges over time. The research suggested that bottom-up approaches to community building have the potential to foster sustainable behaviour change. The study also noted that it had a greater impact where the capacity was also in the form of built-in physical assets such as technology, transport, and infrastructure.

Although the study was conducted in a developed country setting and did not explicitly include SDG7, the findings could be adopted in the rural communities of the Eastern Cape by empowering organised society to take ownership of developing their communities through access to various forms of energy sources for the sustainability of their livelihoods. This can be done in collaboration with the neighbouring higher education institution (i.e., Walter Sisulu University), which could provide the necessary support in terms of curriculum-based off-grid energy technology and offer offsite internship programmes. “With the current challenges faced by the country in terms of energy supply and demand, it is imperative to sow the seed among learners, as future leaders, so that they begin to think of alternatives that will not only satisfy the energy demand but protect the environment as well,” as noted by the spokesperson for the SANEDI (Engel, 2021).

Some key lessons from a feasibility study conducted by Scottish Power (2003), an e7 member company, highlighted that community awareness and social ownership were important in ensuring that communities were prepared for the delivery of electricity services. Unfortunately, due to the lack of a co-ordinated effort between local government and private stakeholders in the renewable sector, these lessons were discarded as the government’s INEP programme was implemented in the areas identified for a feasibility study. During the initial stages of the uptake of renewable energy in the UK, a qualitative study investigated the perceptions of communities towards community-owned compared to developer-owned wind farms. Warren and McFadyen (2010) reported that a change in the development model towards community ownership could have a positive effect on public attitudes towards wind farm developments.

In stark contrast, the South African Government invested in a model of community ownership through a percentage component embedded in the contract between the IPP and the government, where 30% is directed towards socio-economic development among other economic development initiatives. As part of a doctoral thesis, Wlokas (2017) highlighted that government and private companies dominated institutional work efforts in the policy formulation and project development stages of the REIPPP. These findings revealed that reflective spaces were dominated by industry and strategically excluded communities from asserting their experiences and participating in the collective understanding and agreeable processes that would foster long-term relationships between these companies and the communities. The Community and Household Options in Choosing Energy Services (CHOICE) project in South Africa's Eastern Cape sought to enable communities to make sustainable energy choices that reduced energy poverty and stimulated local development. Funded by the Renewable Energy and Energy Efficiency Partnership, the project focused on building local capacity to participate in identifying and exploring locally appropriate energy options with greater community benefits (Best, 2014).

Guha and Chakrabarti (2019) explored the role of local democracy and governance in implementing the sustainable goals through a systematic review of the literature on the decentralisation of local government. The paper highlighted the need for the enhancement of local leadership capabilities and a demarcation of responsibilities among local politicians and bureaucrats, an aspect overlooked by the SDG's agenda. They further argued that participation in policy making should not only involve contribution in terms of labour and resources but through the outcomes of a participatory process which reflects the views of citizens. The paper also acknowledged the likely differences in culture, structure, goals, and objectives among both organisations and individuals. It is imperative that trust between actors is present from beginning, and that local governments have clear, transparent, and accountable procedures to create agreements. The Eastern Cape District Municipalities are at an advantage as there are homogenous groups who speak the same language and vote for the same party that should translate to a seamless approach when affording communities platforms to participate and contribute to their sustainable development policy frameworks.

In an interesting case study by Bosma et al. (2018), Nepal's 2011 Climate Change Policy committed 80% of its financial resources available for climate change to local actors by developing Local Adaptation Plans for Actions where communities came together to identify issues they thought should be addressed at the local level. This participatory process enabled location and community-designed programmes, district and village development committees, as well as ward-citizen forums to channel climate finance from national to local level. This type of ***imbizo*** format may be ideal for the rural areas of the Eastern Cape, where village-led dialogues can be spearheaded by the local citizens.

Summary: The available research has indicated the valuable role of community ownership in developmental initiatives and qualitative results have indicated that some communities do understand the benefits of evolving with energy mix transition when given a platform. What is missing from the literature is the full uncovering of opinions and perceptions of rural communities on accessing both grid and off-grid forms of electricity. There is an underlying resolve that poor communities in these rural areas must always be guided by the government, with the local and district municipalities being their voice. The top-down approach taken by the South African Government has created a dependency culture that needs to be reversed with constitutional reforms or adjustments that will create a legal framework for communities to fully participate in the development of their communities.

2.9.3 The "New" District Development Model

The Municipal Support and Intervention Framework details the various legislative imperatives that require municipalities to monitor themselves as well as the stipulate the role of provincial and national government in monitoring the performance of municipalities (South African Local Government Association, 2020a).

The monitoring of local government occurs at various levels: the self-monitoring by municipalities through the required systems and processes for planning and performance management, and through the Constitution and other legislation (i.e., the Municipal Systems Act and the MFMA) that empowers provincial and national government to monitor the performance of municipalities (South African Local Government Association, 2020a). Economic growth, job creation, and local economic development initiatives are dependent on municipal finances and become constrained when local governments do not function well. Households directly suffer when basic service delivery is poor, but the associated problems extend far beyond. Municipalities need to provide the infrastructure and basic services that support a favourable investment climate, without which disinvestment, deepening unemployment, and poverty may follow (Bureau for Economic Research, 2021). In terms of the functions and structure, Makgetla (2021) noted that the South African Government had not clearly mapped out the state functions (i.e., resources and responsibilities) required for the ***just*** transition. Although municipalities are in a strategic position to have local knowledge and networks to support communities and businesses, they lack the capacity and skills to promote economic diversification and provide technical support (Makgetla, 2021).

In 2019, the national government formulated a DDM aimed at strengthening municipalities. The DDM was adopted to help build a coherent state and to bring about inclusive economic growth, spatial transformation, strategic infrastructure investment, and reliable service delivery for all (Sausi et al., 2023). This comes in the wake of consistent service delivery protest and poor performance by many municipalities, particularly at the local municipality level. Government believes that there is an uneven distribution of capacity across municipalities and developed the model to create a single plan that rationalises roles and responsibilities and is aimed at improving the performance of district municipalities. In an article written to explore whether the new DDM would achieve its intended ambitions of creating a capable local government state, Khambule (2021) expressed that the success of the DDM would depend on creating an inter-governmental framework to ensure responsibilities are delegated to the district level in order to improve the institutional capacity of municipalities to coordinate and implement effective socio-economic policies.

Maswime (2021) argued that the success of the model would be measured by its ability to holistically improve and link important infrastructure units across municipalities. Of concern is that the opinions around the DDM and its success lies squarely with the government ensuring that there is co-ordination of plans across the three spheres through a top-down approach. While it would be understandable that there has not been confidence in the ability of district municipalities to govern successfully, it seems another bandage is being put on an already broken governance system that will not yield the required results intended by the DDM.

Ngcobo and Mudau (2020) suggested that the municipal business model needs to change to embrace the digitalisation of the electricity grid and to demand management initiatives in line with energy transition. They further stressed that municipalities should use the DDM to roll out energy efficiency initiatives and new renewable energy technologies in an integrated manner. A study considering a model for socio-economic development in India deviated from the standard models constructed on empirical data and presented an analysis of a district development model using two waves of census data (Goswami et al., 2019). The study raised several concerns including calling for the need for additional ethnographic and other surveys to be able to understand the underlying mechanisms that would have led to the observed patterns. The key contributions that the paper sought to highlight was that there appeared to be an interplay between social and economic development indicators (Goswami et al., 2019). For example, an interesting observation was that households seemed to prefer acquiring assets more than investing in essential amenities with electrification and lighting focused on more than provision for sources of drinking water. The results of the district-level census data seem to suggest that DDMs may reveal the underlying dynamics unfolding in the lives of individuals and provide a means to evaluate models based on different value systems (Goswami et al., 2019).

Summary: There was a limited body work on the successes of the implementation of the DDM within South African municipalities. The available literature focused on the framework of the model and the capacity issues already in the public domain, with no radical shift from the operational framework of the government and the constitutional duties that municipalities hold. There remains a gap in exploring the deep-rooted cultural aspects entrenched in the communities that municipalities operate in and there seems to be a need for a radical policy change that will allow for a legal framework for communities to independently participate in their own development.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used for the identified research problems. The sub-sections will address the research approach and design, the population target framework and sampling methods, as well as the data collection and analysis used.

3.2 Research Approach

The present study employed a qualitative research methodology to gather data and draw conclusions in an exploratory nature based on an interpretivist epistemology approach to allow the voice of the communities (subjective in nature) to be heard, and the challenges faced by the municipalities to be explored and understood. An interpretivists' knowledge goal is not to discover reality and the laws underlying it, but to develop an understanding (verstehen) of social realities (Allard-Poesi, 2011). Due to the nature of the research background and questions, qualitative research methods were used to gather non-numerical information and its phenomenological interpretation tied in with human senses and subjectivity (Leung, 2015). This exploration provided a nuanced understanding of the socio-culturally shaped community attitudes and perceptions regarding the research objectives which were to: understand the voice of the communities and their perceptions towards the JET framework and explore the various challenges faced by municipalities in financing universal access and JET for the communities they serve (Bhar, 2019). Phenomenology's core perception is of persons as located in socially shared concepts (Wilson, 2012). Phenomenology conceptualises humans as socially-situated beings (Bhar, 2019). Due to the present study's focus on the Eastern Cape where the official language is isiXhosa, the research also touched on certain ethnographical insights to expand on the social phenomena.

3.3 Research Design

The present study involved the collection of large quantities of narrative data from households and municipalities in the Eastern Cape Province in South Africa via interviews based on a semi-structured set of survey questions, face-to-face interactions, telephone calls, field notes from observations, and photographs. Analysis involved coding for themes and patterns, seeking to shed light on the phenomenon being investigated. The qualitative methodology relied on inductive reasoning to generate hypotheses and theories (Leacock et al., 2014), and integrated the various components of the study in a coherent and logical way, ensuring that the research questions would be effectively addressed using the new knowledge created from this study (McGregor, 2017).

3.3.1 Population Target Framework and Sample

Data was collected from 10 village residents across six district municipal areas (i.e., Amathole, Cacadu, Chris Hani, O.R. Tambo, and Buffalo City) who represented at least 51 individuals within their households. Participants were asked to provide their honest insights and perceptions regarding the energy transition in the Eastern Cape as well as their understanding of the current role of municipalities. Semi-structured interviews were conducted in an in-person setting with the village residents using both closed- and open-ended questions to enable respondents to expand and share their lived experiences. Houses with limited access to electricity (i.e., 20 amps and less), IPPs in the vicinity, and those with no access or intermittent access to electricity were targeted. Due to the spatial design of the villages and homogenous characteristics of the village economy (e.g., unemployment, dependence on grants, some family members working in other provinces or towns etc.) the unit of analysis was the households instead of individuals. Familiar villages were identified as the foundation and included Gatyane, Port St. Johns, and Komani.

In considering cultural identity and language knowledge, the interviews were conducted in isiXhosa and translated into English for the purposes of documenting the findings. This allowed communities to fully articulate themselves without being restricted by the English language, as one of the most significant criteria for selecting a site for a qualitative study is cultural representativity (Babor et al., 2008). Cultural theorists define this as the process by which meaning is produced and exchanged among members of a culture using language, signs, and images that stand for or represent things (Osborne et al., 1997). Securing interviews with traditional leaders in the communities proved challenging, as households were preoccupied with traditional affairs during the data collection period; however, the questions posed to the households included their opinions on the level of involvement and pro-activeness of the traditional leaders in communicating and providing education on climate change and the advances in energy transition.

Data was also collected from five municipal representatives via face-to-face semi-structured interviews, in English, to provide insights on energy transition initiatives and municipal plans towards a JET future as well as to provide an understanding of the challenges currently faced by municipalities in financing JET initiatives. The municipalities selected represented a range of local authorities within the Eastern Cape (i.e., metro, district, and local municipalities). These municipal representatives were in managerial and administrative roles which strengthened the credibility of the insights provided to understand some of the fundamental challenges of financing the JET in the Eastern Cape.

3.3.2 Data Collection

A purposive sampling method was used for theoretical saturation; however, due to the explorative nature of the research and the scatteredness of the Eastern Cape villages, snowball sampling occurred in one village. Purposive sampling is defined as the intentional selection of participants because they can best provide the information required to answer the research question. Theoretical saturation means that additional data will no longer bring new insights, the concept being developed is dense, and its relationship to other concepts is well established and validated. Snowball sampling occurs when others in the sample frame use their social network and recommends participants as a good fit with the research question (McGregor, 2017).

After obtaining ethical approval from the University of Cape Town's faculty ethics committee on 18 December 2023 (see Appendix D), the interactions and interviews with the village residents were conducted during the December Christmas period when most family members were present and in a relaxed mode. Having the interview questions available in the indigenous language and interacting in isiXhosa opened robust discussions and solidified trust. The interviews and completion of the semi-structured questions had an average duration of one hour per household due to the explorative nature of the research and the use of the indigenous language to explain and interpret some of the English terminology relating to the ***just*** transition and climate change. All participants were willing to complete the survey questions and provide informed consent for the face-to-face interactions and interviews (see Appendix A).

Although only one family representative completed the survey questions and answered the interview questions per household, other family members were permitted to provide input into the discussions. Many of the interviews took place with the families gathered outside, with children playing and livestock grazing. Due to each household comprising of several individuals, only two households per village were selected to participate, where the conversations were held and lived experiences observed with results documented via field notes. To protect the personal details of the family members and physical locations of the villages, the participants are referred to as participants and village locations were identified by their municipal area. At the time of visiting the villages in the Wesley-Hamburg area that is in close proximity to the Wesle-Ciskei Wind Farm, Stage 3 loadshedding was in effect, which gave rise to further discussions on the impact of transitioning to cleaner sources of energy instead of placing additional reliance on the grid.

The municipal representatives were provided with semi-structured questionnaires, interviewed personally to expand on the answers (two municipal representatives interviewed during December), and contacted telephonically (three municipal representatives during May 2024) to determine their communication strategy on sustainable developmental issues regarding grid and off-grid energy resources and their challenges in financing initiatives that would ensure universal access through the roll out of alternative sources of energy.

The participants represented the King Sabata Dalindyebo Local Municipality, the OR Tambo District Municipality, the Mbashe Local Municipality, the Ingquza Hill Local Municipality, and the Buffalo City Metropolitan Municipality. The interviews each had a duration of between 30 minutes to an hour and no names of the municipal representatives were used for identification. The researcher found that similar elements for the themes became evident after the third interview with the local municipality representatives and theoretical saturation occurred by the fourth interview. The fifth interview with the representative from the Buffalo City Metropolitan Municipality was purposefully selected to enhance not only the sample size but to obtain additional context to the challenges faced by municipalities during the energy transition. The Buffalo City Metropolitan municipality is the second largest regional economy in the Eastern Cape, contributing up to 19.8% of the province's Gross Domestic Product (Buffalo City Metropolitan Municipality, 2019).

3.3.3 Data Analysis

"The objective in qualitative content analysis is to systematically transform a large amount of text into a highly organised and concise summary of key results" (Erlingsson & Brysiewicz, 2017). Due to the importance of correctly capturing the community voices and perceptions, their level of understanding of off-grid technologies and the JET, and how these may be beneficial to their day-to-day lives, an inductive logic process was employed to create themes when analysing the study data. In exploring the challenges faced by municipalities in financing the fundamental aspects of a JET, a level of analysis of the answers and comments provided was also performed to create themes.

Moving from specific to general, through multiple and repeated levels of analysis, qualitative researchers often use inductive logic to create themes (Creswell, 2009). While real/lived experiences of communities may emerge as themes, how these experiences influence or affect the broader community livelihoods and contribute to some of the financing challenges faced by municipalities was also expected to emerge, leading to a more contextual thematic analysis method (Braun & Clarke, 2006). Braun and Clarke (2006) provided six phases that serve as guidelines on conducting a thematic analysis, while also acknowledging that the guidelines are not fixed rules. Due to the nature of the research questions and objectives of the present study, the six phases were used as guidelines, as presented in Table 2 below.

Table 2. Six-Phase Thematic Analysis.

PHASE	PROCESS FOLLOWED	METHOD AND TOOLS USED
Phase 1: **Familiarising yourself with your data**	Data collected in an interactive manner. Knowledge of the cultural undertones and language required sensitivity and thoroughness in the interpretation of the data. Data was read through multiple times and the correct interpretation of results documented in isiXhosa was confirmed from various bilingual people to ensure no meaning is lost in translation during transcription.	Manual survey questions written in both English and isiXhosa for villagers, and survey questions for the municipal representative captured in English. Note taking where more information is shared. Verbal interviews and voice recording by cellphone. Physical interaction at the village, sitting with villagers and spending time with them. Use of images where applicable
Phase 2: **Generating initial codes**	Data approached with specific questions in mind which are directly related to the research questions. This helped with the coding process of identifying features of the data that are interesting and align with the questions being explored.	Manual coding through colour coding or highlighting answers that are similar with same colour on the word documents received back from the sample. Survey questions captured on excel and each answer captured and consolidated
Phase 3: **Searching for themes**	This process used to re-focus the analysis to overarching themes	Commonalities between answers provided by sample were drawn across different codes. These codes matched against the conceptual frameworks defined to frame themes that will emerge.
Phase 4: **Reviewing themes** Phase 5: **Defining and naming themes**	Phase 4 and phase 5 combined as one stage of categorising of the themes that have emerged post phase 3 where the essence of what the themes are about was defined and ready to be captured	Outliers documented separately on word. Written detailed analysis done on word.
Phase 6: **Producing the report**	Once the analysis was completed and emerging themes categorised and analysed, a full report of the findings was documented	Chapter 4 of the research contain the full report of the research findings.

Source: Braun and Clarke (2006).

3.3.4 Limitation and Trustworthiness

Trustworthiness in qualitative research can be referred to as the "truth value, applicability, consistency, and neutrality" of the results (Rodwell, 1998, p. 96), and can be viewed as a shared reality where readers and writers find commonalities in the research constructive process (Anderson et al., 2007). Establishing trustworthiness is subdivided into credibility, transferability, dependability, and confirmability (Amin et al., 2020). The credibility of this study was promoted through the use of semi-structured interviews and data collection through different contexts for the varying types of participants (Amin et al., 2020). In this study, multiple data collection tools were used to separate the views of the residents from the views of the municipal representatives, this enabled the voices of the communities to be amplified and contrasted against the perspectives of the municipal representatives.

Due to the hostile environment of the current political landscape, with national and provincial governments intensifying pressure on local government, access to interview the municipal managers became a challenge. Other municipal representatives, specifically in the engineering, finance, or administrative units, were then consulted to provide a broader understanding and theoretical interpretation of the topic. Due to the topical nature of the JET, these municipal representatives were able to answer certain interview questions, resulting in additional related study themes.

Although all efforts were made to translate the Xhosa language to English, some gravitas of information may ultimately be lost in translation. However, these limitations were lessened due to the advantage of the language knowledge by the researcher and that many village residents have family members that are employed in cities and are exposed to broader aspects of the economy. Therefore, permission was also sought from these family members to answers their questions and ensure the interpretation of the information obtained was correctly captured. In the absence of an extended family member, a linguistic professional would have been contacted via LinkedIn to review the interpretation. Although the majority of the sample selected shared similar backgrounds, the participants were from different districts and local municipalities which ensured a fair representation of views and perspectives. As the Protection of Personal Information Act limits the public availability of names, surnames, and the names of businesses, the data has therefore been deidentified and only the gender, clan name, village, and sector of the participants has been reported where applicable.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter discusses the research findings based on the qualitative study undertaken through the completion of semi-structured, open- and closed-ended questions, and face-to-face interviews used to gather data from village residents and municipal representatives across various municipal areas and municipalities within the Eastern Cape Province of South Africa. It also presents an overview of the demographic information of the participants as outlined in Chapter Three above. Following, the thematic findings relating to the voices and perceptions of communities with regards to the JET framework and its intended long-term sustainable benefits are discussed, and the themes relating to the challenges faced by the municipalities in mobilising funding for the JET and universal access for communities are presented in detail based on the Six Phase Thematic Analysis Guidelines developed by Braun and Clarke (2006). The chapter concludes by discussing and summarising the thematic findings and themes that emerged.

4.2. Demographics of the Population

The sample selection for this study was determined according to various categories to draw conclusions on the diverse perspectives and opinions of these communities. Although 10 individuals per village were interviewed, they represented their households resulting in a representation of 51 people. Due to the distance between East London (i.e., the researcher's residence) to the Alfred Nzo District Municipality villages (524 km), no individual was interviewed from that area. The diversity in demographic profile was useful in providing a broad perspective of the lived experiences of people in different areas of the Eastern Cape, as well as for the amplification of their voices regarding issues and decisions that affect them. The same questions were posed to village residents regardless of their local municipality, while a different set of questions was posed to the municipality representatives to balance the views of the communities with the views of government.

Table 3 below provides an overview of the demographic profile of the 10 village resident participants. The demographics indicated an average of five people per household, including children. Eighty percent of participants were unemployed and depended on grants and government pension pay-outs from the South African Social Security Agency (SASSA) for sustainability, while 20% of those employed were in low-skilled jobs in shops or factories near their villages. Only one household had a family member who was previously employed by Harmony Gold Mines but had their employment terminated due to health issues. Two households did not have any electricity, while the remaining eight households had pre-paid electricity with an average spend per household of ZAR495 per month.

Table 3. Demographic Profile of the Village Resident Participants.

PARTICI-PANT NO.	DISTRICT MUNICIPAL REGION	HOUSE HOLD SIZE	ELECTRIFIED HOUSEHOLD	TYPE OF ELECTRICITY	AVERAGE MONTHLY SPEND	PREVIOUS MINE WORKER	ECONOMIC STATUS - EMPLOYED	ECONOMIC STATUS - UNEMPLOYED	ECONOMIC STATUS - SASSA
1	Amathole	4	Yes	Pre-paid	500	None	1	1	2
2	Amathole	4	Yes	Pre-paid	300	None	1	1	2
3	Chris Hani	5	Yes	Pre-paid	250	None		2	3
4	OR Tambo	7	Yes	Pre-paid	500	None		7	
5	Chris Hani	8	Yes	Pre-paid	2500	None	3	5	
6	Cacadu	7	Yes	Pre-paid	200	None		7	
7	Buffalo City	5	Yes	Pre-paid	200	None		3	5
8	Buffalo City	4	No	N/A	N/A	None		4	
9	Amathole	6	Yes	Pre-paid	500	Yes, Harmony		3	
10	Amathole	1	No	N/A	N/A	None		1	

The interview that resulted from the snowballing sampling method was held with a businessman who had been operating a well-known pie shop in an area with an operational wind farm. Although the participant was not a large power user, their perspective was important in providing further perceptions and a voice for local entrepreneurs.

A separate set of questions and interviews were arranged with municipal representatives (see Appendix C) to shed light on the current mechanisms of financing universal access through understanding the level of engagement with the communities they serve and to explore some of the challenges experienced within the municipality environment. Two finance employees, a senior accountant, and chief financial officer from the OR Tambo Municipality were interviewed during December 2023. Three additional municipal representatives were provided with the questions and interviewed during May 2024 to expand on the challenges faced by municipalities in mobilising funding across the Eastern Cape for JET initiatives. The representatives held between 10 to 18 years of related work experience. Their perspectives were important in understanding broad governance processes and the financial challenges faced by the municipality. The interviews were also used to gain insights into the municipality's IDP used as the bases for the government's funding model. Table 4 below presents the demographic profile of the municipality representatives.

Table 4. Demographic Profile of the Village Resident Participants.

PARTICIPANT NO.	POSITION	GENDER	MUNICIPALITY	YEARS OF EXPERIENCE
1	Senior Accountant	Female	Kind Sabata Dalindyebo Local Municipality	12
2	Chief Financial Officer	Female	OR Tambo District Municipality	16
3	Senior Electrician	Male	Ingquza Hill Local Municipality	10
4	Electrical engineer	Male	Mbhashe Local Municipality	15
5	Senior Manager: Electrification Distribution	Male	Buffalo City Metropolitan Municipality	18

Unfortunately, a meeting with a chief (iNkosi) could not be secured as the king had many official traditional events and funerals to attend during the data collection period; however, the questionnaire (refer to Appendix B) did require respondents to elaborate on the level of community engagements organised by the chief. No interview was held with a community-trust member for the Wesley-Ciskei Wind Farm as there was no local person that could be identified upon enquiry in the village or via the wind farm's website.

4.3 Thematic Findings

This section presents the findings and themes related to the perceptions and voices of the community regarding JET and its long-term sustainable benefits. It also provides an overview of the findings and themes which emerged from the interviews relating to the current government funding model for universal access and the challenges that municipalities face in mobilising funding for alternative sources of energy that can support communities and local businesses.

4.3.1 Voices and Perceptions of Communities Regarding JET and its Long-Term Sustainable Benefits

Based on the thematic structure outlined in Chapter Three from the guidelines by Braun and Clarke (2006) and the analysis of the interviews, the initial codes were carefully generated to capture the opinions of the communities (voice of the community) on the JET framework and its long-term sustainable benefits. Due to the exploratory nature of this research, the purposeful sampling method used, and the ethnographic insights, similarities and differences were grouped into first-order categories, followed by labelling and categorising of the emerging themes. According to Gioia et al. (2013), little attempt should be made to distil categories in the first order (i.e., first-order analysis). For the present study, it was important to give each respondent enough time to answer the questions and to fully engage in the study topic in their own language in a manner that was conducive to generating open and honest responses. Three key themes emerged that framed the voices and perceptions of the communities interviewed regarding the JET framework and its intended long-term benefits (refer to Figure 6 and Figure 7) and will be discussed in greater detail below.

4.3.1.1 Theme One: The Negative Impact of Climate Change

Respondents were provided with semi-structured why, how, and where question types to gain insight into their knowledge of climate change, how it impacts their lives, how they respond to catastrophic events, the role of government, and initiatives implemented to reduce or mitigate climate change related issues. Participants were allowed to ask for interpretation and elaboration of the questions and were also provided with enough time to express their understanding with practical examples and lived experiences.

On questions relating to climate change and the JET framework, the thematic analysis revealed that all participants had an understanding of climate change and could articulate their lived experiences of its impact in their villages as well as in the general environment. The participants expressed a sense of a limited ability to do anything to control the changing weather patterns, and some perceived the changes be a threat outside of human control.

Participants shared experiences of extreme heat which had negatively impacted their crops. This combined with the lack of rain resulted in the limited availability of water for storage in their water tanks. Others mentioned the damage caused to their water tanks from the heat. With their crops and livestock suffering from heat-induced droughts, the participants also highlighted how farming was no longer an attractive economical lifestyle as it was previously for their forefathers. Participant 2 elaborated by saying, *"asisalimi nokulima ngenxa yokunqaba kwamanzi," ["we no longer plant crops due to a lack of water"]*. Participant 1 also explained the impact on climate change in their area with, *"yes, hot temperatures have caused field fires in my village which burned crops and some livestock."*

Flooding was another weather phenomenon commonly discussed, as well as its impact by destroying infrastructure and roads. Participants in the Amathole District Municipality noted how they had learnt to navigate potholes and avoid certain roads that were permanently destroyed by flooding. Hailstorms that affected the OR Tambo Municipality were also perceived to be due to climate change by the participants residing in this municipal area. Participants from the Cacadu District Municipality relayed a recent experience of flooding in the area during May 2023:

> "*Rain continued for three days non-stop, my whole kitchen area was damaged as water damaged the roof causing water to pour inside causing damage to my cupboards, stove and fridge… although we had experienced rain before, this one seemed to be stronger and lasted far longer than anticipated*" [translated from isiXhosa to English].

Participant 4 from the OR Tambo District Municipality showed the researcher one of the dilapidated houses in his yard, explaining that it had been damaged by hailstorms in 2021 and that they had not been able to rebuild them due to a lack of funds.

The articulation of the expanded responses provided highlights that communities are not aware that weather patterns had significantly shifted over the previous several years. As many families resided in these villages for many generations, their insights were enough to validate that the change in climate has had a tangible impact on lower sectors of the economy, which has also been fairly catastrophic in nature as it changed the landscape (non-arable land) and affected the infrastructure (inaccessible sections of the village). The participants recounted how, after each adverse weather event, their communities would rally to re-build, and extended family members would send money to rebuild destroyed homes and infrastructure.

The lack of municipal help was highlighted as disappointing but expected, as all participants noted that the municipality was not quick to assist the communities after extreme weather events.

In linking the JET as a principle for assisting the country and its communities to move away from its heavy reliance on fossil fuels, the village residents were asked whether they explicitly knew about or had ever heard of the term "***just*** energy transition." None of the participants understood what the term meant, nor did they understand the concepts of the framework. It was only when parts of the framework, such as reducing the use of coal due to its negative health and environmental impacts, were explained in isiXhosa did one participant (Participant 9, who previously worked in the mines) indicate that they had an idea of what the framework meant, *"I used to work in the mines, and I was medically boarded due to ill health due to the fumes that affected my breathing, I am still on medication for asthma"* [translated from isiXhosa to English]. In following the guidelines by Braun and Clarke (2006), this outlier was documented separately and will be discussed further as part of the impact of the Wesley-Ciskei Wind Farm under Theme Two below. Other participants only commented on certain aspects of the JET framework explained in isiXhosa, which included the lack of community participation in decision-making as well as generally highlighting their plight of unemployment, poverty, and a lack of access to resources.

Climate change is known and experienced through lived experiences as demonstrated and articulated by the participants; however, the concept of a JET spearheaded by government as a focused mechanism of ensuring there are ***just*** ways of transitioning communities was not known. Interactions with the communities identified that they could not link the use of fossil fuels as one of the contributors to the negative changes in the climate nor did they understand the principles of what the JET sought to entrench. It became clear from the interviews that climate change as a force of nature was real; however, policies relating to climate change and mitigation strategies were unknown by these communities.

It appears that communities rely on the structural dimensions of social capital (i.e., the social interactions) to cope and support each other during the aftermaths of the catastrophic impacts of climate change. Unfortunately, trust (as the cognitive and attitudinal dimension of social capital) could not be established between the communities and the local municipalities as there was a general lack of support from the municipalities prior to, during, and after the negative impacts of changes in the climate (Bayat, 2005). As with the case study conducted in Nepal (Bosma et al., 2018), climate change policies cannot be developed without the participation of local actors, local adaptation plans, and the inclusion of community participation in the granular aspects of the JET framework. A clear understanding of the underlying causes of climate change and actions are required to slow down its negative impact and needs to be clearly articulated to communities.

From these interactions, communities displayed resilience and ultimately require greater education on the sources of climate change and how they can mitigate against its negative impacts. Explaining concepts in isiXhosa or indigenous languages to homogenous groups should be adopted as a strategic approach when creating platforms for communities to participate and contribute to sustainable development policy frameworks, including the JET.

4.3.1.2 Theme Two: Indigenous Knowledge and Perceptions on Alternative Sources of Energy

A list of the different types of alternative energy sources was provided to the participants to understand their knowledge; however, open-ended discussions were encouraged to document the expression and articulation of their lived experiences. The discussions were primarily held in the indigenous language of isiXhosa to capture the cultural undertones and depth of knowledge regarding alternative sources of energy used within these rural communities.

Most participants were knowledgeable regarding several forms of renewable energy such as gas and sun (solar), and they expanded this discussion by mentioning that they ensured the availability of gas within their homes due to intermittent electricity availability in their villages as the result of either loadshedding or frequent power failures. They also mentioned that outside fires were used for cooking larger pots of food, particularly during traditional events or during other large family gatherings. Participants 3 noted, *"apha elalalini unqabile umzi ongenarhasi ngoba kaloku umbane usoloko uhamba,"* ["*there is hardly a house without a gas stove here in our village due to intermittent electricity*"]. There were many interesting stories of how, decades ago, village residents would climb on top of house roofs or in trees to use the sun (solar) to cook, charge batteries, or light fires - these discussions were an indication of an indigenous knowledge of the different forms of energy generation. Participant 1 noted:

> "*Ngexesha lengcinezelo, umbane singekabinawo, sasikhwela bezu kwendlu sibekhe Ibattery ye radio ukuze sizomamela ibali nemiphanga ebusuku." ["during the apartheid years, before we had electricity, we used to climb on top of our house roof to use the sun charge radio batteries so we could listen to important announcements on radio at night*"].

However, the discussions revealed that the village residents considered grid electricity as far superior and less labour intensive than off-grid or renewable energy sources. This supported the results of the study conducted by the UCT Energy Research Centre (2004) reported in Chapter One above. Participant 8 responded that *"sifuna umbane olwayitwa edongeni thina, asifuni kusokolwiswa ngumbane osebenzisa ilanga only xa Likhona," ["we prefer to have grid electricity instead of relying on solar power which is generated when there is only sunlight"].*

Two participants (Participant 8 and Participant 10) still did not have electricity in their homes after many years of applying. They confirmed that they had been promised an electricity connection four years ago during election campaigning; however, engagements with Eskom confirmed that the main challenge was the non-availability of capacity in the current transformers and lines in the village. When asked why they did not use alternative sources of energy such as installing solar roof panels, they both conceded that they preferred the stability of a grid connection and were willing to wait until Eskom or the government connected their houses.

During the interview with Participant 3, a family member noted that fresh cow dung was previously used for warmth during the cold winter days and dry cow dung would be used for making fire. In researching the use of cow dung in energy generation, an article published in India revealed that the village of Chhattisgarh used cow dung to generate electricity as the methane from the dung can be used to generate biogas which is another source of alternative energy that was not covered in the survey questions (Express Web Desk, 2021). These examples and sustainable ways of surviving indicated that the indigenous knowledge could be put to good use to encourage and educate communities on the transformational power of using their available resources to generate electricity. The use of gas as an alternative energy source could also be explored further as most participants already owned gas stoves. Fracking studies have already commenced in the Eastern Cape, and the results of drilling tests conducted in 2021 revealed pockets of shale gas (DeKlerk, 2021).

A landowner close to the Wesley-Ciskei Wind Farm (Participant 9) was questioned as to whether the wind farm provided any benefits to the village or community. The participant confirmed that they received monthly rental income for the use of land where the turbines had been installed. He also confirmed that they had been due to meet with the attorneys for the wind farm in February 2024 regarding the installation of additional turbines and to discuss the progress of other deliverables agreed to with the wind farm (e.g., building tar roads and re-fencing yards). On the day of the interview, there was loadshedding in the area, and Participant 9 found it ironic that although the turbines were running, the community did not have electricity:

> "*Xa umbane ungekhoyo, siyazifanela nomntu wonke apha eSouth Africa, asibi nambane ngoku sihlala ecaleni kwezi zinto*," ["*we are just like everyone in SA, when there is loadshedding we also do not have electricity even though we live right next to the wind turbines*"].

As noted above, after explaining the JET framework in isiXhosa, Participant 9 expressed concern regarding any further looming mine shutdowns as a result of commitments to reduce the use of fossil fuels. He indicated that after receiving a medical boarding due to ill health, he was no longer able to work and confirmed that none of his family members had been recruited to work during the construction of the Wesley-Ciskei Wind Farm.

The snowball effect occurred when this participant referred the researcher to the local businessman who had been operating a well-known pie shop in the area for many years. An interactive discussion with the businessman revealed a different perspective, where he listed several benefits to the community since the construction of the wind farm. He reported that local temporary low-skilled labour was used during construction of the turbines, and the town became busy with construction workers, investors, and foreign visitors which helped the local economy and boosted his own profits. Wi-fi internet connectivity was also installed and available around the rural school area, and the Wesley Clinic had been renovated. As with Participant 9, he also thought it unfortunate that the electricity generated by the wind farm was being directed into the grid instead of into the local community, particularly during loadshedding: *"it is really a pity that the electricity generated by the wind farm is fed back to the grid. Even though we are a stone throw away from the turbines we do not have electricity during loadshedding."* Although his shop was operational during loadshedding, his pies could not be warmed up as he could not afford to install a generator for his small business.

4.3.1.3 Theme Three: Lack of Local Municipal Support and Engagement

The two questions posed on the role of municipalities and chiefs in driving dialogue, ***iimbizo,*** and participation in decision making evoked emotional responses from the participants. The discussion emphatically revealed the serious lack of involvement from both local municipalities and chiefs/counsellors. All participants strongly expressed the poor levels of engagement from these government representatives. Participant 4 reported, "*kulona wethu zange zabakho iintlanganiso ezinjalo*," *[*"*we have never had any meetings in our district*"*]*. Similarly, Participant 5 noted, "*not very often in our area only when they are introducing a new programme do we get invited to dialogues*." Participant 2 curtly responded, "*never*." Participants confirmed that there had been no community engagements, and they were not aware of any plans for advancing cleaner or renewable energy sources. Participant 1 noted, "*I have never heard any meeting regarding clean energy transition*," with Participant 3 supporting this with, "*I never see any meeting between municipality and community ever since I was born*." The participants all confirmed that engagements only occurred during election periods and that discussions tended to lean towards political issues. At this point in the discussions, the researcher was careful to ensure that the focus of the interview was not redirected to political matters.

The two participants (Participant 9 and Participant 10) who resided near the wind farm confirmed that community engagements facilitated by the privately-owned wind farm were held during the early environmental assessment stages and negotiations resumed for the use of portions of their land for the wind turbines. They confirmed that the municipal councillor who was part of that initial meeting only committed to ensure that there would be benefits for the community during the construction project. Participant 7 noted, *"unqabile kweyethu ilali umasipala," [*"w*e never see municipal involvement in our village*"*]*.

Participant 8, who had no electricity connection in their home, supported this with, *"akazange eze uceba azocacisa ngombane ekuhlaleni," ["we've never been engaged by the councillor on issues of electricity in our area"].*

Sentiments about the lack of community engagement by the municipalities, councillors, and chiefs echoed in each village, with all participants providing emotional expressions towards the lack of support from government officials. It was unfortunate to realise that the disjoint between the municipality and the communities had expanded to levels that have completely eroded trust between the two parties. Participant 3, a 26-year-old male, reported that in his lifetime he had not witnessed any community engagement in his village. The emotional expressions towards the role of the government and municipalities supports the high levels of service-delivery protests witnessed across the country. Apathy and indifference have led to distrust. Figure 6 below captures the various answers and opinions provided that were used to conduct the second-order analysis in order to generate themes.

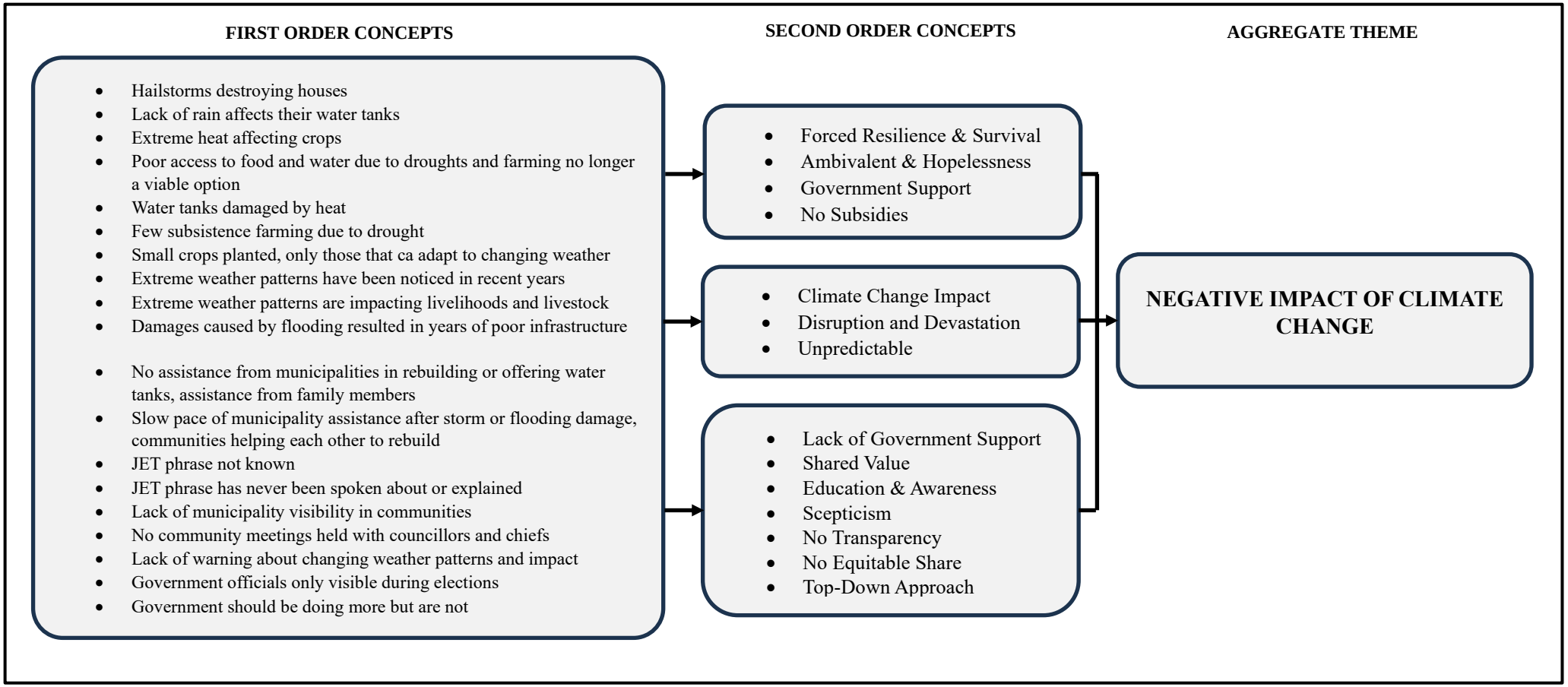

Figure 6. Thematic Analysis - Community Voices: Theme One.

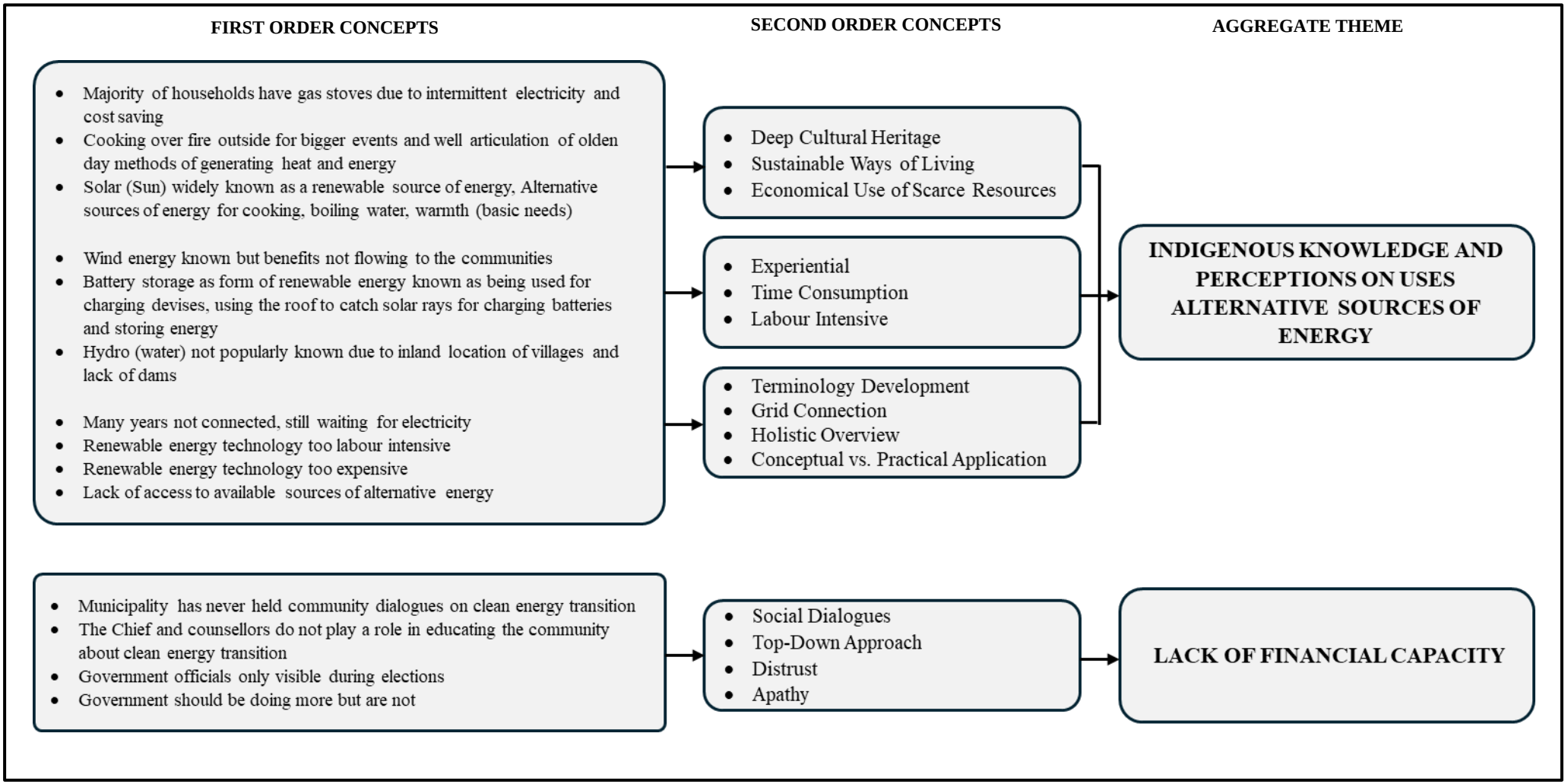

Figure 7. Thematic Analysis - Community Voices: Themes Two and Three.

4.3.2 The Challenges Faced by Municipalities in Mobilising Funding for Universal Access and JET Initiatives in the Eastern Cape

The data collected from the municipality representatives used a different set of questions to explore the answers to the research question on the effectiveness and viability of the current public funding model in accelerating access to sustainable energy in the Eastern Cape by 2030, as well as the challenges that municipalities face in mobilising funding for the JET initiatives and universal access to energy. The data obtained was used to explore the ability of the municipality, tasked with reticulation, in driving the agenda of renewable energy, community asset ownership, and local industrial development through various funding mechanisms. The first-order analysis included an examination of the municipality representatives' answers to the survey questions contrasted to the village residents' responses to questions about the municipality and chief's community interactions. An analysis was also conducted on interview answers regarding the roll out of the small-scale embedded generators, an initiative that seeks to empower communities to generate their own power with the capability of selling excess energy back to the municipality. This led to the second-order analysis which revealed themes relating to the lack of financial capacity and lack of political will, as illustrated in Figure 8 below.

4.3.2.1 Theme One: Lack of Financial Capacity

Although the officials could clearly articulate their district and municipal development plans, they conceded that they were not party to all the specifics related to the JET framework or climate change mitigation strategies within their local and district municipalities. The municipality representative from the OR Tambo District Municipality confirmed that the municipality did not have the requisite powers and functions for electricity reticulation as this was the function of the local municipality. Participant 2 confirmed that, "*KSD, Mhlontlo, Nyandeni, Ingquza hill and PSJ all fall under the OR Tambo district municipalities, and these have the power and function to reticulate under the INEP*." They also noted that the district municipality was largely rural and had a very small budget relative to its challenges, with the community services sector (government services) being the largest economic sector in the district. This sentiment was also shared by the municipal representative of the Ingquza Hill Local Municipality which is largely rural:

> *"Since unemployment rate of up to 55% apha kulengingqi ["we have an unemployment rate of 55% in this district"] and we are generating very low revenues as many people here depend on grants. Ingquza Hill's population is largely illiterate and the economic growth currently severely below average due to lack of employment and lack of basic infrastructure such as roads, electricity and unstable communication networks which would have helped the tourism and agriculture sectors"* – Participant 3.

All of the local and district municipality representatives confirmed that they did not have SSEG applications nor an approved SSEG tariff structure. However, the Buffalo City Metro Municipality representative confirmed that they did have an official process for SSEG application and were in the pilot phase of setting up an infeed tariff:

> *"In line with the President's approval and NERSA support, all private rooftop solar generators need to register their installations with BCMM electricity department, we are working on the implementation of the infeed tariff structures where excess electricity generated privately can be sold back to the municipality"* - Participant 5.

He further elaborated that the SSEGs would be likely to impact their revenue sources as a greater number of individuals move to self-sustainable alternative sources. However, no financial projections were provided to support this emerging risk. The status of the SSEG in the province, as confirmed by the municipality representatives interviewed, was confirmed against the December 2023 status of embedded generation in South African municipalities (South African Local Government Association, 2023). The report indicated that even though there were seven municipalities with formal application processes for the SSEG's, only three of these had established SSEG tariffs.

On the question of community engagements regarding climate change related potential disasters and the JET framework, the representatives explained that they assisted communities with disaster management and recovery plans when natural disasters occurred, with Participant 1 noting: *"according to the Disaster Management Act 57 and the MFMA, a budget is made available to respond to disasters."* Participant 4 further confirmed, *"common disasters in Mbashe municipality are floods, lightning, hailstorms and droughts and the municipality has contingency plans to deal with these disasters."* Participant 2 noted:

> *"About R46million has been set aside for municipal disaster relief expenditure as we have been experiencing a lot of wildfires and natural disasters in the district. We therefore provide temporary shelter to affected communities and assign a response team to deal with reported incidents."*

When probed further and in highlighting the complaints from the communities that municipalities were not responding timeously and had not assisted communities with rebuilding efforts, Participant 2 responded with:

> *"Yes, the rate of response is slow, however the poor infrastructure and lack of resources have a negative impact in fully assisting communities. However, we are doing our utmost best to provide temporary shelter when members of the communities have lost their homes or possessions."*

When asked about their specific plans on access to electricity and the use of alternative sources of energy, two local municipal representatives mentioned that their municipality plans focused only on access to electricity through the grid, as facilitated by Eskom and government through the INEP. Participant 1 reported:

> "*The government promulgates funds for reticulation through the DORA [Division of Revenue Act] where Eskom then acts as an agent to connect households to the grid. The municipality implemented solar generated lights within the CBD and automatic switch off lights inside the municipal building.*"

Participant 3 further confirmed that, "*we use INEP and Eskom to prioritise household electrification, we are also prioritising electricity backlogs and plan to implement alternative energy for about 583 households due to access challenges."*

The officials also provided an overview of their IDPs, which are used by the municipalities to outline its goals and objectives for economic and social development in the short-, medium-, and long-term. They conceded that the IDPs should also outline strategies for transitioning to cleaner or renewable forms of energy; however, except for Buffalo City Metro Municipality and Mbashe Local Municipality, the officials confirmed that in the short- to medium-term there were no considerations regarding the JET framework or climate change mitigation strategies included in their municipal IDP:

> "*We have certain wards where we installed solar panels as a source of alternative energy where R500 000 was set aside in 2023/2024 financial year for their maintenance, we received an amount of R4.7 million grant under the INEP where Eskom is tasked with the electrifications of the villages as well as addressing the backlogs*" - Participant 4.

> "*We have a Green City workstream tasked with developing an integrated environmental and climate change strategy, we have mapped out coastal vulnerable areas in order to identify risk zones for pro-active identification and response to rising sea levels which come as a results of climate change*" - Participant 5.

The Buffalo City Metropolitan Municipality representative (Participant 5) also reported on the municipal plans to explore alternative sources of funding such as municipal bonds, land financing, and concessional loans. However, he emphasised that key strategic imperatives such as correct billing, improved revenue collection, and cost containment measures would need to be prioritised to strengthen their financial statements to attract investments. The officials shared additional financial challenges faced by the municipalities, varying from poor revenue collection, escalating debt, and high unemployment rates which impacts the payments of rates and taxes as well as the lack of access to funding due to their poor financial performance and qualified audit reports.

Participant 2 noted that, "*we have a general lack of payment for services in this district, even those that can afford do not pay for services. The municipality does not generate enough revenue to meet competing needs in the district*." Participant 1 further confirmed that, "*our debtors age analysis is greater than 120 days with penalties upon penalties applied to outstanding debt, as at end of June 2023, our debtors balance was around R877 thousand with 58% of that being debts greater than 120%.*"

It is interesting to note that when the village residents were questioned about funding for the electrification of households, they were all aware that the government and/or municipalities sourced their funds from the fiscus and through rates and taxes from the taxpayers; however, due to the high levels of unemployment, they conceded that there could not be much revenue generation for their local municipalities as they primarily used pre-paid electricity meters and struggled each month to pay any other municipal rates charges. There was a general lack of systems in place for revenue recovery or outstanding debt collection, with municipalities relying on disconnection mechanisms to manage the non-payment of electricity. Participant 3 noted that, "*free basic electricity is provided to indigent households using electricity coupons,"* while Participant 5 reported:

> "*We are still reeling from the effects of Covid-19 as we see a steady 3-year decline in revenue collection, the current collection rate is at 69% and we aim to improve this to 80%. We have appointed external debt collectors to assist with debts greater than 90 days.*"

A study conducted by the Asian Development Bank Institute reported that if local municipalities are properly designed, they can function as a mechanism to create circular financial flow where profits from electricity sales and associated financial benefits of renewable energy supply may remain in communities to form a shared stock for residential benefit (Peimani, 2018). Statistics South Africa (2021a) previously reported that the Eastern Cape had one of the highest unemployment rates in South Africa, further evidenced from responses of the study participants. This level of unemployment forces residents to be concerned about the necessities for survival.

4.3.2.2 Theme Two: Lack of Political Will

As outlined above, the local and district municipality representatives confirmed that they were aware of the SSEGs, but that they had not been implemented within their districts or included in any short- to medium-term planning. They viewed the REIPPP as a private-sector-led initiative and did not explicitly share any discussions or involvement from a municipal perspective, as evidenced by Participant 1 with, "*the REIPP programme is spearheaded by DMRE through the bidding process, the municipality does not get involved.*" Although the Buffalo Metro Municipality had a SSEG application process, they were still in the pilot phase of implementing the SSEG tariffs which included the infeed tariffs.

The OR Tambo District Municipality representative drew the researcher's attention to their IDP when probed further on the progress of the renewable energy programme. The paragraph, under Section 2.2.2 of the report, read as "other sources of renewable energy in the district also need to be studied and exploited as and where possible" (O. R. Tambo District Municipality, 2023).

What was rather disappointing was that no records could be produced as evidence of previous community engagements or visits conducted by the municipalities, and there were also no immediate plans in place for educating and engaging communities on transitioning to cleaner energy sources. The municipal representatives from both the OR Tambo District Municipality and the Kind Sabata Dalindyebo Local Municipality each answered "*no*" when asked whether their municipalities had previously held community engagements on the issues of climate change and the JET framework. Representatives from Mbashe and Ingquza Hill Local Municipalities answered "*yes*" to this question but were unable to provide any verbal or written evidence of these engagements. Further, none of the representatives were able to provide budget allocations for education and training in the renewable energy sector. Although high unemployment rates were cited as a challenge in the province, none of the municipalities could demonstrate planning for skills development in the evolving energy sector.

An agency problem emerged during discussions on the role of the municipalities in ensuring universal access. Eskom was mentioned several times by the municipal representatives as the cause of some of the challenges that the municipalities faced in mobilising funding and ensuring universal access. Participant 1 noted that, "*tariff increases by Eskom cause increases in the cost of bulk electricity which places pressure on service tariffs to our communities*," while Participant 5 commented that, "*the BCMM is exploring alternative energy sources in order to reduce its reliance on Eskom, this will ensure increased energy availability and reduce the impact of loadshedding*." Participant 3 further added that, "*Eskom takes long to fix reported problems, and some villages are still awaiting connections from Eskom.*"

The Association of Municipal Electricity Utilities (2017) suggested that municipalities could diversity their energy mix by purchasing electricity from various producers and play an important facilitation role for communities through renewable energy. The lack of explicit inclusion of the JET in the municipal IDPs indicates that there are no immediate plans for the diversification of the energy mix at the district level within the Easten Cape Province.

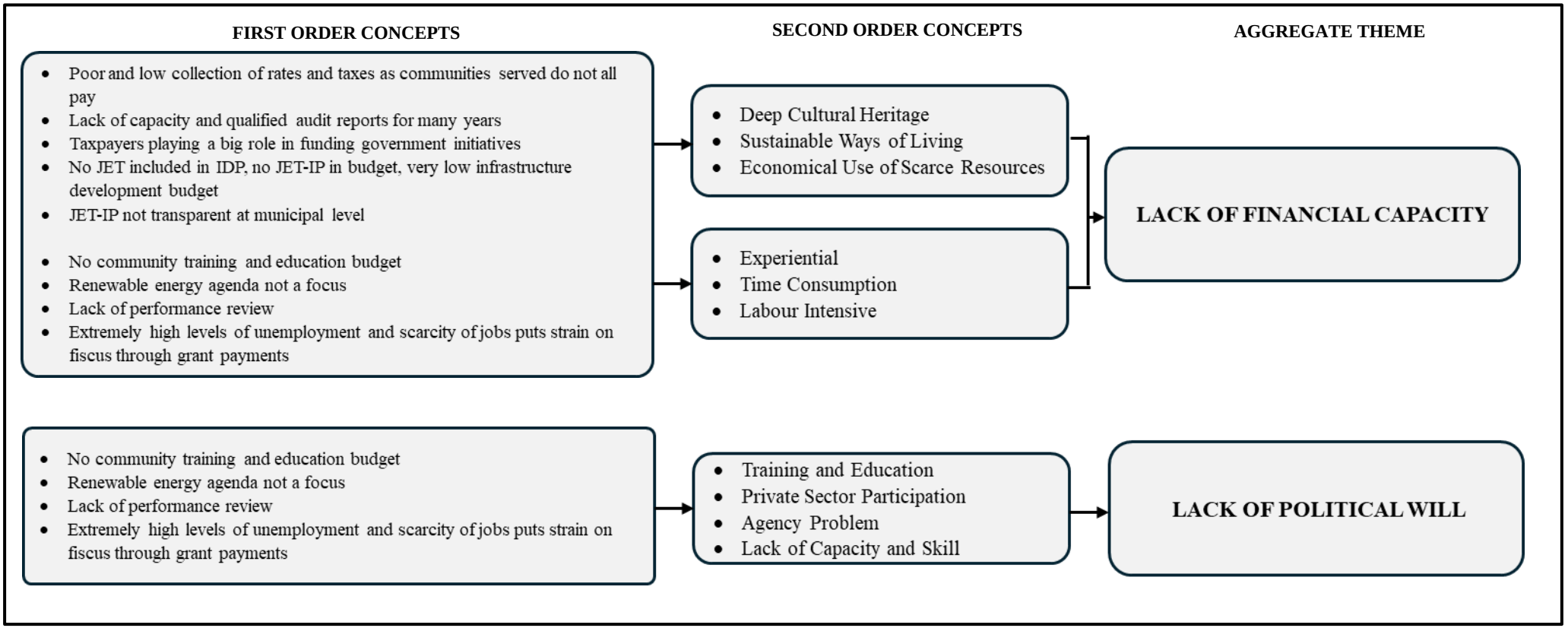

Figure 8. Thematic Analysis - Innovative Funding Models.

4.4 Discussion

Although the impact of climate change was known and could be illustrated through the lived experience examples, there was a general lack of understanding of some of the underlying causes of climate change. The respondents could not connect how generating electricity could be the cause of extreme and unpredictable weather patterns. The JET framework was viewed as just another "big term" introduced by government without community involvement. The findings and thematic analysis amplify the frustration of communities in being left behind when decisions are made. There is a strong perception that the introduction of alternative energy sources only seeks to exclude these communities from accessing grid electricity which is viewed as superior, cheaper, and less labour intensive than other sources of energy. These opinions and perceptions have undertones of a lack of education, support, and direction from the municipalities who they view as corrupt, useless, and incompetent. The lack of trust by the communities for the government and municipalities' ability to best serve them was strongly vocalised as the root cause of the lack of transparency and equitable access to services. The JET framework is therefore not well understood and the long-term sustainable benefits of alternative sources of energy are perceived to be inferior to the universal access principles of connecting all citizens to the grid.

Taliep (2022) highlighted that community engagement is imperative for ethical decision-making to ensure energy justice, the effective transition to alternate forms of energy, and to address community concerns. Decision makers must therefore consciously include a participatory, collaborative, and people-centred approach and rely on community guidance and direction (Taliep, 2022). Ofusori (2023) shared that political will is an important factor in enhancing social cohesion in South Africa, with social cohesion being the degree of unity, solidarity, and trust that holds communities together. Unfortunately, the interviews with the local municipality representatives demonstrated the lack of political will to engage on issues of renewable energy and alternative revenue-generating initiatives. Due to the continued state of poor financial performance and service delivery, the municipalities appear to be operating with impunity due to the lack of accountability and oversight from the national government. The JET-IP has not been geared towards grass-roots sustainable development and there is lack of transparency on the granular details of the investment plans and funding initiatives. This lack of transparency has filtered down to the municipal levels as no inclusion or provision has been made for initiatives geared towards JET and cleaner sources of energy. The municipality acts as an agent of government but uses Eskom as the main distributor of electricity; however, the lack of accountability and oversight has led to major agency issues with services not reaching the intended communities.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the key findings from the present study based on the empirical literature and qualitative research methodology used in the data collection. It also offers recommendations for policy makers and providers of private funding in the context of the findings discussed in Chapter Four and reflects on the limitations of the present study.

5.2 Summary of the Research Findings and Conclusions

According to the JET framework, a JET in South Africa seeks to place citizens at the centre of decision making and aims to achieve quality of life for all South Africans, all performed in the context of increasing the ability to adapt to the adverse impacts of climate change (Presidential Climate Commission, 2022b). As stated above, the governing model of South Africa as contained in Schedule 4 of the Constitution makes electricity reticulation a municipal responsibility. The INEP, REIPPP, and now the JET framework all seek to serve as instruments for the roll out of energy access and the electrification of all South African households. These initiatives are championed and sponsored by the government with Eskom, the private sector, and municipalities acting as agents in the delivery of technology for grid access and alternative sources of energy. Within South Africa, social justice cannot be divorced from energy justice or JET due to the impact that reduced reliance on coal would have on the economy and livelihoods of the country. The conundrum of South Africa's economic reliance on coal versus its Nationally Determined Contribution Strategy and commitments under the 2015 Paris Agreement on the reduction of fossil fuel use, its high unemployment rates, and incapacity of many of the municipalities in the Eastern Cape serves as a huge hurdle for the country.

The role of communities and community dialogues in gaining trust through ***iimbizo*** using indigenous languages can prove to be effective, as used in this study to ask questions, conduct interviews, and have general discussions about topics related to climate change, access to electricity, and municipal engagements. All of the study participants were enthusiastic and open about engaging with the researcher and in sharing indigenous knowledge regarding self-sustainability and survival. Based on the interactions and interviews, the term JET was not known, and the framework was not clearly understood. However, the concepts of alternative energy sources and climate change were well known and understood. This disjoint can be attributed to the complicated use of phrases and language in defining the JET. Even the municipal representatives interviewed could only offer a high-level definition of the JET and did not know what it sought to achieve or how it related to governance within their districts. There was a strong perception that grid-supplied electricity was far more efficient and superior to the alternative electricity sources.

There was also the perception that using solar, wind, and battery energy sources would require additional labour and effort to install, monitor, and rely on for electricity generation. This demonstrated the lack of education on the technological advances of alternative energy sources and the advantages of sustainability and self-sufficiency that these sources can provide.

Although it was well known how municipalities source their funding, none of the participants mentioned funding from the private sector or other investors, while the finance municipality representative only mentioned the fiscus and rates and taxes. The opportunity to introduce cheaper and alternative sources of electricity generation were lost due to a lack of political will from the municipalities and a lack of understanding of the long-term sustainable benefits of accessing renewable energy. Due to high unemployment rates and the lack of capacity and skills within the municipalities, the public funding model is not producing its intended results and continues to put a strain on the fiscus. Innovative funding models such as private sector partnerships, angel investors, and philanthropies should be explored within the Eastern Cape where its landscape and existing indigenous knowledge can be capitalised to introduce and sustain more community-owned renewable energy assets.

5.3 Policy Implication and Recommendations

Ninety percent of the US$8.5 billion JET-P deal is projected to be used for the decommissioning of coal-fired power plants, strengthening the transmission grid, increasing the development of renewable energy, and improving the distribution system, electric vehicle system, and green hydrogen exploration (Bloomberg, 2022). At least SS$5.3 billion of this funding is in the form of low-cost loans, US$1.5 billion as commercial credit, and US$1.3 billion as guarantees (Bloomberg, 2022), which means the government will still be incurring high levels of debt servicing. Although some of the benefits will be felt in the economies in certain regions within country, there is a high probability that this energy transition fund will not be transparent, equitable, and ***just***. The imminent decommissioning of coal plants may have a negative impact on already high unemployment rates and may result in a large volume of workers returning to their homesteads. An observation from the Wesley-Ciskei Wind Farm visited during the data collection phase of this study showed that the turbines ran automatically, with no physical human on-site intervention required. Employment opportunities were only largely created during the construction stages, for period of 18-24 months.

The strengthening of transmission grids will assist with capacity constraints but benefits the private sector in the long term as it will enable the installation of additional renewable energy facilities. The introduction of SSEGs in South Africa is still in its infancy, with most of the uptake being in the metropolitan areas.

The off taker for renewable energy is Eskom, while the communities surrounding wind farms or solar parks have not directly benefitted, as evidenced in the findings presented in Chapter Four above. Education regarding the possibilities of extracting gas as an alternative energy source may be a strategy to open additional dialogues about the different sustainable ways of generating electricity. The Eastern Cape procured up to 95% of wind capacity in Bid Windows 1-4 under the REIPPPP through 17 renewable energy IPPs in the province, attracting almost ZAR22.1 billion in investment share through the value of the projects structured and secured as local equity (Department of Mineral Resources and Energy, 2019). Since the introduction of the South Africa's REIPPPP in 2011, over 43% of the total wind capacity procured is in the Eastern and Western Capes, with the Eastern Cape having the largest number of wind projects in the country, with a value of almost ZAR20 billion (South Afrian Wind Energy Association, 2018). The private sector could play a greater role in educating communities about the benefits of renewable energy and motivate for a wheeling model that could also directly benefit the communities in terms of capacity constraints. Communities also need to be empowered with a sense of ownership and be active participants in the establishment of renewable energy assets within their areas.

Based on the findings from the present study and the literature review presented above, a ***just*** transition can only really be ***just*** when tangible benefits flow to the communities for sustainability. It is therefore recommended that community engagement and education be strengthened, with grant funding being made available for the establishment of community NGOs to drive dialogues and reach deep rural areas of the country. The use of the local language proved to be beneficial during the data collection process, as it allowed respondents to relax, answer the questions in their language, and ask for clarity in a language and phrasing familiar to them. Shared value and the community ownership of assets will drive social cohesion and empower communities. Policy makers should insist on the creation of a legal framework for communities to fully participate in decision making and the formulation of IDPs.

The top-down approach used by the government has not yielded any positive results but has instead kept communities in a perpetual state of dependency and hopelessness. The voices of the communities and their perceptions towards the JET have been clearly outlined in the key findings presented in Chapter Four above. Indigenous knowledge is rich when it comes to alternative energy sources and what is needed instead is education and demonstration of the modernisation and ease of access to sustainable new technologies. The South African governance model has unfortunately created dependencies and framed in the minds of South African citizens that anything indigenous is considered primitive, as was the view of the apartheid system. The re-wiring of this thinking and the empowering of communities is required for community members to believe and appreciate that their indigenous knowledge, albeit revolutionised, can still be effective in supporting both sustainable and economical ways of living.

As mentioned above, a CE as a theoretical framework can support the sustainability and growth of renewable energy sources, evidenced in a study conducted by SANEDI that revealed the untapped potential of micro-digestors and how these can be effectively used within South Africa (Newswire, 2022). A DDM formulated by the government in 2019 was adopted to help strengthen and bring about inclusive economic growth and reliable service delivery for all (Sausi et al., 2023). The success of this model has not yet yielded its intended results and its success remains questionable. The funding model in South Africa needs to cater for community-driven projects with the provision of start-up capital. Where projects are not bankable, angel investors and philanthropies can play a major role in mentoring and offering guarantees for community-owned renewable energy assets.

5.4 Limitations of the Study

Analytical information relating to the impact of the rollout of SSEGs to the revenue of the municipalities was not available in order to understand the future challenges that municipalities could potentially face due to the introduction of renewable energy initiatives. It could also not be factually established whether municipal-led community engagements were held due to poor document management. A planned interview with the chiefs (iiNkosi) could not be secured due to their non-availability. The chief's perspective would have expanded the understanding of proximity of the community to chiefdom on issues of sustainable development.

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APPENDICES

Appendix A: Informed Consent Form

INTERVIEW/SURVEY CONSENT FORM

Participant name: ……

I volunteer to participate in a research project conducted by **Dineo Dlulane** as partial fulfilment of the requirements for the **Master of Commerce in Development Finance Degree** at the UCT Graduate School of Business. I understand that the research is designed to gather information about **How *Just* is Just: Financing transition towards sustainable development goal (SDG 7) in the Eastern Cape** and that I will be one of approximately **15** of people being interviewed for this research.

Objective(s) of the research

1. To understand the community voice and perceptions towards the just energy transition framework and its long-term sustainable benefits for their communities.
2. To explore the challenges faced by municipalities in mobilising funding for the JET initiatives for communities and industries within the Easter Cape and universal access.

Ethics approval

The ethical clearance for this study was approved by the UCT GSB Research and Ethics Committee on 18 December 2023

Participation and confidentiality

I understand that my participation in this research is voluntary, that I will not be compensated and that I may withdraw at any time. The interview will take approximately 45 - 60 minutes to complete and will be audio recorded where necessary. I understand that I will not be identified by name in any reports using information obtained from this interview and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

Should you have any questions or concerns please contact me dlljea003@myuct.ac.za or my supervisor Associate Professor Latif Alhassan; latif.alhassan@uct.ac.za

Consent

I consent to participate in this interview, based on the terms outlined above and subject to the following additional condition of my own (if any).

---------- ----------

Signed by interviewee **Date**

…….. …….

Signed by Student **Date**

Appendix B: Questions for Villages and Metros

Section 1: Demographic information

1. Name & Surname / Clan name
   Igama nefani / Isiduko:
2. Address or Village name
   Idilesi okanye Igama lelali
3. How many people in household
   Bangaphi abantu abahlala endlini

	Yes - Ewe	No - Hayi	Number/Amanani
Employed/Kuyaphangelwa			
Unemployed/Akuphangelwa			
SASSA receipient/Igrant yakwa SASSA			
Pensioner / Inkamnkam			
House electrified/Ukhona umbane			
	Yes - Ewe	No - Hayi	Igama lomgodi
Any member of family working or worked in mines			
Ilungu lekhaya elisebenze okanye elalikhe lasebenze emigodini			

4. Cost of electricity per month
   Imali yombane ngenyanga
5. Pre-paid or Conventional meter
   Othengwayo okanye osebenzisa imeter kaMasipala
6.

Please tick all types of renewable energy sources	Gas	Hydro	Battery	Wind	Sun	Other (specify)
Khetha zonke indlela ozaziyo zokwenza umbane	Igrasi	Amanzi	Ibattery	Umoya	Ilanga	Ezinye (cacisa)

Section 2: Interview/Survey questions

Do you know what climate change is?
Uyakwazi ukutshintshatshintsha kwemoyezulu?

If yes, what has been the impact of climate change in your area?
Ukuba Ewe, luyichaphazele njani indawo yenu olutshintshathintsho lwemoyezulu?

Are you familiar with Just Energy Transition?
Ukhe weva ngentetha ethi Just Energy Transition?

Where does government or municipalities receive funding for the electrification of houses?
Urhulumente okanye omasipala uyifumanaphi imali yokufakela umbane ezindlini?

How often does the Municipality hold community dialogues on clean energy transition?
Umasipala uzibamba kangaphi iintlanganiso nabahlali malunga nezicwangciso zokufakela umbane olungele unkutshintsha kwemozulu?

What roles does the Chief and/or community leaders play in educating the community about clean energy transition?
Idlala indima engakanani iNkosi neenkokheli zasekuhlaleni ekufundiseni abahlali ngokutshintshela kwiindlela ezingcono zokuphehla umbane?

Appendix C: Questions for Municipality Representatives

Section 1: Demographic information

1. Gender of respondent:
2. Name of the municipality and/or district:
3. Position held:
4. Years of experience:

Section 2: Interview/Survey questions

1. Does the municipality have a just energy transition (JET) framework?
2. Does the municipal IDP make specific mention of JET?
3. What are the current financial challenges that the municipality face?
4. Are there any Small Scale Embedded Generators (SSEG) allowed in this municipal area:
   If yes: Is there a SSEG tariff?
5. Has the municipality held community engagement on issues of climate change and JET?
   If yes: Date and location
6. What Demand Side Management or alternative sources of energy has the municipality rolled out? (please list)
7. How does the municipality generate or source its funding for electrification of households?
8. What is the role of national government and Eskom in partnership with the municipality?

Appendix D: Ethics Approval

UNIVERSITY OF CAPE TOWN
FACULTY OF COMMERCE
Igniting Knowledge and Opportunity

Commerce Faculty Ethics in Research Application Form

Any person planning to undertake research in the Faculty of Commerce at the University of Cape Town is required to obtain ethical clearance. This form is intended for undergraduate students, honours students, PD Dip students and Masters students whose research component is less than 90 credits.

Once this form is completed it should be sent via email to your departmental ethics representative. Your supervisor will be able to provide you with the contact details.

It is assumed that the researcher has read the UCT Code for Research involving Human Subjects (Available at http://web.uct.ac.za/depts/educate/download/uctcodeforresearchinvolvinghumansubjects.pdf) in order to be able to answer the questions in this form. Students must include a copy of the completed form with the dissertation/thesis when it is submitted for examination.

1. PROJECT DETAILS			
Project title:	MCom Development Finance Minor Dissertation		
Principal Researcher/s:	Dineo J Dlulane	**Email address(es):**	**Dlljea003@myuct.ac.za**
Research Supervisor:	Associate Professor Latif Alhassan	**Email address(es):**	latif.alhassan@uct.ac.za
Co-researcher(s):		**Email address(es):**	
Department: Development Finance			
Brief description of the project: Transitioning to cleaner sources of energy requires both equitable access and just ways of ensuring that no one is left behind. The fiscus is the main funder of electricity with the municipalities being legally constituted to provide reticulation to communities. However, funding constraints, lack of skills, poor service delivery are proving to be impediments to just energy transition and addressing issues of climate change in order to reach some of the sustainable developmental goals. This research seeks to explore and understand the voices of the communities served by the municipalities when it comes to issues of transparency, accessibility, fairness and justness of the transitioning, the research also seeks to explore other forms of funding models that may complement the current government model budgeting and developing its development plans. The topic is therefore: How ***just*** is the just transition: Financing transition towards SDG 7 in the Eastern Cape, South Africa.			
Data collection: (please select) ☒Interviews ☒Questionnaire ☐Experiment ☐Secondary data ☐Observation ☐ Other (please specify): ____			

Com Ethics_V5_May2017

Have you attached a research proposal OR a literature review with research methodology? (please select) ☒Yes ☐No

2. PARTICIPANTS

2.1 Does the research discriminate against participation by individuals, or differentiate between participants, on the grounds of gender, race or ethnic group, age range, religion, income, handicap, illness or any similar classification?	YES	~~NO~~
2.2 Does the research require the participation of socially or physically vulnerable people (children, aged, disabled, etc.) or legally restricted groups?	YES	~~NO~~
2.3 Will you be able to secure the informed consent of all participants in the research? (In the case of children, will you be able to obtain the consent of their guardians or parents?)	~~YES~~	NO
2.4 Will any confidential data be collected or will identifiable records of individuals be kept?	YES	~~NO~~
2.5 In reporting on this research is there any possibility that you will not be able to keep the identities of the individuals involved anonymous?	YES	~~NO~~
2.6 Are there any foreseeable risks of physical, psychological or social harm to participants that might occur in the course of the research?	YES	~~NO~~
2.7 Does the research include making payments or giving gifts to any participants?	YES	~~NO~~

If you have answered **YES to any of these questions**, please describe how you plan to address these issues (append to form):

Physical meet up and interviews with all participants will be arranged.

Affiliations of participants: (please select)

☐Company employees ☐Hospital employees ☒General public ☐Military staff ☐Farm workers ☐Students

☐ Other (please specify): _____

Race / Ethnicity:

Are you asking a question about race/ethnicity in your questionnaire?

☐ Yes ☒No

Which race categories have been used?

Have you included the option: "Prefer not to answer" as part of your race/ethnicity question?

3. PROVISION OF SERVICES

Does your research involve the participation of or provision of services to communities?
If your answer is YES, please complete below:

3.1 Is the community expected to make decisions for, during or based on the research?	YES	~~NO~~
3.2 At the end of the research will any economic or social process be terminated or left unsupported, or equipment or facilities used in the research be recovered from the participants or community?	YES	~~NO~~
3.3 Will any service be provided at a level below the generally accepted standards?	YES	~~NO~~

If you answered YES to any of these questions, please describe below how you plan to address these issues.

3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please state how organisational permission has been/will be obtained:

n/a

Have you attached the letter from the organisation granting permission? (please select)

☐ Yes ☐ No, but this **will be** obtained before commencing the research ☒ Not applicable

Are you making use of **UCT students** as respondents for your research? (please select) ☐ Yes ☒ No

If yes, have you contacted Executive Director: Student Affairs for permission? (please select) ☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐ No ☐ Awaiting a response

Are you making use of **UCT staff** as respondents for your research? (please select) ☐ Yes ☒ No

If yes, have you contacted Executive Director: Human Resources for permission? (please select) ☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐ No ☐ Awaiting a response

Contact Emails: Executive Director: Human Resources (Miriam.Hoosain@uct.ac.za)
Executive Director: Student Affairs (Moonira.Khan@uct.ac.za)

4. INFORMED CONSENT

What type of consent will be obtained from study participants?

x ☐ Oral Consent

x ☐ Written Consent

☐ Anonymous survey questionnaire (covering letter required , no consent forms needed)

☐ Other (Please Specify)

How and where will consent/permission be recorded?

Have you attached an informed consent form to your application? ☒ Yes ☐ No

5. SPONSORSHIP OF RESEARCH

If your research is sponsored, is there any potential for conflicts of interest?
If your answer is YES, please complete below

4.1 Is there any existing or potential conflict of interest between a research sponsor, academic supervisor, other researchers or participants?	YES	NO
4.2 Will information that reveals the identity of participants be supplied to a research sponsor, other than with the permission of the individuals?	YES	NO
4.3 Does the proposed research potentially conflict with the research of any other individual or group within the University?	YES	NO

If you have answered **YES** to any of these questions, please describe how you plan to address these issues (append to form)

6. RISK TO PARTICIPANTS

Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range? (please select)

☐ Yes ☒ No

If yes, answer the following questions:

1. Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks
2. Outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study
3. Outline whether and why you feel that the value of information to be gained outweighs the risks

1.
2.
3.

I certify that I have read the Commerce Faculty Ethics in Research policy ☒
(http://www.commerce.uct.ac.za/Pages/ComFac-Downloads**)**

I hereby undertake to carry out my research in such a way that

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	Dineo Jean Dlulane	16 December 2023

This application is approved by:

Supervisor Assoc./Prof Latif Alhassan		17th December 2023
Departmental Ethics Rep	B.Zolfaghari	18.12.2023

Questionnaire checklist on next page

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