Assessing the effectiveness of climate finance in promoting a just transition: A case study of Siyathemba Local Municipality in the Northern Cape, South Africa

by

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ABSTRACT

Climate finance and the question of "a just transition" have been the subject of heated debate in South Africa in recent years. This Master's dissertation *Assessing the effectiveness of climate finance in promoting a just transition: A case study of Siyathemba Local Municipality in the Northern Cape, South Africa* addresses this urgent area of study. The issue of transitioning from coal to renewable energy has received public criticism from labour unions including the National Union of Metalworkers of South Africa (NUMSA) and some political figures who argue that the transition will drive jobs losses in the coal sector value chain. However, on the other hand, some commentators have argued that the just transition in South Africa can be the driver of new financial investments in clean technologies, while also creating much needed jobs in the country. Despite these debates, transitioning away from coal to renewables is well underway, and mechanisms are in place to mobilise climate finance to support South Africa's just transition efforts.

For instance, in 2011, the South African government introduced the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) in an effort to fulfill South Africa's international commitment to address climate change, including the Paris Climate Agreement. The REIPPPP is aimed at accelerating South Africa's decarbonisation process through paving the way for the uptake of renewable energy, while also addressing the socio-economic challenges facing local communities across South Africa. As part of the REIPPPP, South Africa has managed to secure more than R200 billion in climate finance investments. The preferred bidders in the REIPPPP, referred to as Independent Power Producers (IPPs), are obligated to contribute to the socio-economic development of local communities located within a 50km radius of where they operate. The projects being implemented by a majority of the IPPs are located in remote and marginalised rural communities that are faced by critical socio-economic challenges.

This study explores whether the IPPs operating in Siyathemba Local Municipality (SLM) in the Northern Cape province of South Africa have contributed to the socio-economic development of small towns in the area including Prieska, Marydale, Niekerkshoop and the mining settlement at Copperton. These are towns plagued by poverty, unemployment, inequality, and a dependency on social grants. The study investigates the extent to which climate finance investments in renewable energy development in SLM supports the promotion of a just transition by contributing to the

betterment of members of the local population. It is informed by just transition policy debates and media reports about the REIPPPP, including peer reviewed and grey literature reports on the just transition and climate finance in South Africa and the rest of the world. Observation, and interviews, review of company reports and literature review were used as data collection methods for conducting this research.

The study reveals that significant climate finance investments are flowing into SLM, and that these investments are changing the spatial landscape of the municipality through what is argued a process of re-industrialisation. However, a core finding of this research is that the rollout of renewable energy projects in SLM has not promoted a just transition in the towns of Prieska, Marydale, Niekerkshoop and Copperton, because these projects create only temporary, poorly paid jobs for the local population who lack the skills required for the construction and operation of such projects. Furthermore, the climate finance investments have not addressed the issue of energy poverty in SLM. Thus the issue of injustice in South Africa's just transition in SLM is asserted in this study. Throughout this research I investigate the barriers and opportunities associated with achieving a just transition in SLM by climate finance investments in renewable energy development.

Key words: Renewable energy development, just transition, climate finance, socio-economic spatial development, Siyathemba Local Municipality, re-industrialisation, injustice, Upper Karoo, Renewable Energy Independent Power Projects Procurement Programme, Independent Power Producers, small towns

DECLARATION OF ORIGINALITY

I, Sonwabile Lugogo (student No: 10594303) hereby declare that this dissertation is my own original work and has not previously been submitted to the University of Pretoria or any other university for the purpose of a degree. I acknowledge the work of others through references both in-text and bibliography.

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ACRONYMS AND ABBREVIATIONS

B-BBEE	Broad-Based Black Economic Empowerment
CEE	Climate Justice, Energy Justice and Environmental Justice
CIF	Climate Investments Funds
COSATU	Congress of South African Trade Unions
COP	Conference of the Parties
CPI	Climate Policy Initiative
CSP	Concentrated Solar Power
DFIs	Development Financial Institutions
DMRE	Department of Mineral Resources and Energy
DoE	Department of Energy
ECDCs	Early Childhood Development Centres
ED	Enterprise Development
FITs	Feed-In-Tariffs
GCCA	Generation Connection Capacity Assessment
IDC	Industrial Development Corporation
IDPs	Integrated Development Plans
JETP	Just Energy Transition Partnership
ILO	International Labour Organisation
IPP Office	Independent Power Producer Office
IPPs	Independent Power Producers
IRP	Integrated Resource Plan
KZN	KwaZulu Natal

LED	Local Economic Development
LULUs	Local Unwanted Land Uses
MLL	Minimum Living Level
MOU	Memorandum of Understanding
MW	Megawatt
NDP	National Development Plan
NPO	Non-Profit Organisation
PCC	Presidential Climate Commission
PPA	Power Purchase Agreement
PV	Photovoltaic System
RDP	Reconstruction and Development Programme
REDZ	Renewable Energy Development Zones
REIPPPP	Renewable Energy Independent Power Projects Procurement Programme
RFP	Request for Proposals
SACFP	Southern African Climate Finance Partnership
SASSA	South African Social Security Agency
SDGs	Sustainable Development Goals
SED	Socio-Economic Development
SKA	Square Kilometre Array
SLM	Siyathemba Local Municipality
SMEs	Small and Mid-Size Enterprises
SRD	Social Relief of Distress
UN	United Nations

UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wide Fund for Nature

Contents

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

1.1 The urgent need for a just transition in South Africa

1.1.1 Climate change, poverty, unemployment and inequality in South Africa

Climate change is regarded as one of the greatest environmental challenges facing the human population in the 21st century (Chikulo, 2014; Ruppel and Luedmann, 2013). In the context of South Africa climate change poses a significant threat to water resources, food security, health, infrastructure, as well as the country's ecosystem services and biodiversity (Ziervogel et al, 2014). Climate change has already resulted in recurrent extreme weather events such as droughts and floods, which have caused enormous damage to the country's infrastructure and livelihoods; these events have displaced thousands of people in South Africa (Presidential Climate Commission (PPC), 2022).

In early 2022, for instance, the KwaZulu Natal (KZN) province of South Africa was hit by one of the worst disasters in recent history. KZN experienced heavy rains, flooding, and mudslides, which resulted in the displacement and death of hundreds of people, and the destruction of infrastructure estimated to cost billions of rands to fix. Climate change is a serious threat to South Africa given that the country is regarded as one of the most unequal in the world in terms of income and wealth distribution (Francis and Webster, 2019). If not responded to appropriately, climate change will further exacerbate the triple-helix challenges of poverty, unemployment and inequality in South Africa (United Nations (UN), 2020; Islam and Winkel, 2017).

In addition to the threats posed by climate change, poverty and employment remain persistent challenges facing South Africa (World Bank, 2018; Najma, 2019). In the first quarter of 2022, South Africa's unemployment rate was 34.5% (Statistics South Africa, 2022). Poverty rates remain high among black South Africans, the unemployed, female and child-headed households and children (World Bank, 2018). Poverty and unemployment levels are high in South Africa's rural and remote communities where there is little economic activity taking place. At present, South Africa is in turmoil, with a significant number of the population dependent for their survival on various social grants including the Social Relief of Distress grant (introduced during the peak of the Covid-19 pandemic in 2020 and extended until 2023), as well as old age and child support grants. Along with the afore-mentioned challenges, South Africans are confronted by persistent

power cuts, which have intensified since 2008. This year alone (2022), South Africans have been subjected to more than 1000 hours of load-shedding. Considering these challenges, there is no doubt that transitioning towards a sustainable and inclusive future is imperative in South Africa (Davies, 2022). This transition can be achieved by mobilising climate finance to support the just transition in South Africa.

Climate finance and a just transition are emerging concepts. However, it is important to note that the just transition concept is not new despite recently gaining traction in academic literature. The just transition concept emerged in the 1970s and 1980s promoted by the American labour movement to safeguard employees who lost their jobs as a result of environmental protection measures (Lager et al, 2021; McCaueley and Heffron, 2018; Smith, 2017). Climate finance refers to finance that is mobilised from private, public and alternative sources to support mitigation and adaptation actions to address climate change. In the context of this research, "climate finance" refers to financial investments mobilised to support South Africa's renewable energy development to decarbonise the energy sector and contribute to local socio-economic development. The "just transition" idea refers to a transition towards low carbon and climate resilient economies that will ensure that the costs and benefits of the transition are equally distributed across gender, class, race and geographic areas, ensuring that no one is left behind in the transition. Justice is a critical component of the just transition. However, according to Heffron and McCauley (2018), governments, businesses, institutions, and scholars frequently talk about the shift to a low-carbon economy without raising the issue of justice. The concepts of climate finance and a just transition are discussed in Chapter Two.

1.1.2 South Africa's response to climate change and the triple-helix challenges

To respond to the negative impacts associated with climate change and socio-economic challenges, South Africa outlined its Vision 2030, which was adopted by Parliament in 2012 as part of the National Development Plan (NDP). Vision 2030 seeks to guide the country's "sustainable development trajectory and advocates for a transition to a low carbon, resilient and just society" (World Bank, 2018). The NDP provides an opportunity for creating and building resilient and prosperous local communities in some of the most vulnerable regions in South Africa.

In line with its Vision 2030 South Africa committed to decarbonising the energy sector in order to address climate change and reduce the country's carbon emissions, per the 2015 Paris Agreement and Agenda 2030 on Sustainable Development Goals. The country's commitment to the transition to a low carbon economy was further boosted by climate finance investments in the renewable energy sector (RES4 Africa Foundation, 2020). This was achieved through the country's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), launched in 2011 by the Department of Energy (DoE) (Baker, 2014).

Since it was launched in 2011, the programme has managed to attract more than R200 billion in debt and equity investments; of this amount R1.5 billion has been committed to socio-economic development of local communities across the country (Independent Power Producer (IPP) Office, 2021a). The rollout of the REIPPPP has led to widespread investor confidence and triggered the deployment of substantial capital and investment from development financial institutions (DFIs) and financial institutions such as commercial banks (Davies and Wlokas, 2022). In accordance with South Africa's ambitions for a just transition, the Independent Power Producers (IPPs) are required to direct a portion of their investments towards socio-economic development of local communities that are host to renewable energy projects.

In contrast to some of the world's renewable energy programmes, South Africa's REIPPPP is unique. For instance, it does not only aim to reduce greenhouse gas emissions by greening South Africa's energy sector, but its procurement policies emphasise the provision of socio-economic benefits for local communities (often categorised as marginalised communities) located in the vicinity of the renewable energy projects (COBENEFITS, 2019). In addition to its strong socio-economic component, the REIPPPP also seeks to address climate justice, energy justice, environmental justice and social justice issues in South Africa (Wlokas et al, 2012). The REIPPPP follows a just transition approach, because it is centred around the principles of sustainable development (Swilling et al, 2015). One of the key aspects of the NDP's Vision 2030 is to mobilise adequate resources to finance mitigation and adaptation efforts in South Africa.

1.1.3 Towards attaining a just transition at the local community level through climate finance investments in renewable energy development

Since 2009, there have been calls for mechanisms that provide funding for climate action to be designed in a manner that enables a just transition at the local level, especially for the vulnerable and marginalised communities who are severely impacted by climate change (Atmadja et al, 2020). Existing research suggests that channelling climate finance at local community level has the potential to intensify distributional justice by increasing the share of resources to deliver just processes and outcomes (Colenbrander et al, 2018). Channelling climate finance investments in socio-economic development of local communities to advance a just transition is essential in South Africa in light of the injustices of the past and the prevailing socio-economic difficulties facing the country. For instance, the Climate Investments Funds (2020) argue that:

> South Africa's history of colonial rule and apartheid means it is imperative that any plans seeking to address the challenges and opportunities to accelerate the transition to a low-carbon, climate-resilient society, especially following the Covid-19 pandemic, are inclusive, just, and sustainable. Transition pathways that do not acknowledge and address the past, present, and continued marginalization of large segments of the black population will exacerbate their vulnerability and result in legitimate resistance (Climate Investment Funds, 2020, 12).

On paper the climate finance investments in South Africa's REIPPPP are well positioned to drive local socio-economic development in vulnerable and marginalised communities where most of the renewable energy projects are located. For instance, the socio-economic development component in the REIPPPP is legally binding. As part of the procurement process "40% of the shares of all IPPs must be owned by South African Broad-Based Black Economic Empowerment (B-BBEE) companies, and a percentage of profit must be spent on the social upliftment of communities within a 50km radius of the renewable energy projects" (Bloem et al, 2021, 4). To date, the REIPPPP has contributed significant financial commitments to local communities through enterprise development (ED), socio-economic development (SED) and local ownership, with a total of R23 billion committed to SED, of which R18.8 billion has been allocated to local communities where the independent power producers (IPPs) operate (Davies and Wlokas, 2022). In this context, it can

be argued that South Africa's just transition is not only concerned about energy transition but the country's development objectives. Swilling et al argue that:

> Whereas the goal of an energy transition is to decarbonise the South African economy to align with global trends, the goal of energy democracy goes further: a just transition to a decarbonised economy that is more inclusive, socially just and environmentally sustainable (Swilling et al, 2022, 12-13).

Although the REIPPPP is well positioned to contribute to the socio-economic development of local communities where IPPs are located, socio-economic benefits such as human capacity building, job creation and enterprise development in rural areas are yet to be attained (Walwyn and Brent, 2015 in Winkler et al, 2017). Winkler et al (2017) further argue that the top-down approach that the REIPPPP adopts has constrained its ability to reach remote rural communities and stimulate socio-economic development in local communities as per the promise of climate finance investments in the programme. Climate finance investments in renewable energy development in South Africa need to ensure that socio-economic opportunities are created for rural and marginalised communities, especially since most renewable energy projects in South Africa are located in communities that are characterised by severe economic and social challenges such as poverty, unemployment and inequality (COBENEFITS, 2019).

The just transition in South Africa 'need[s] to ensure that neither the vulnerable in the country's coal region, Mpumalanga, nor the vulnerable in the national economy are left behind. The transition should not undermine social justice or sustainable development at either scale' (Winkler et al, 2021, 3). However, the policy impacts of the REIPPPP on national economic growth and social inclusion are lagging behind expectations, especially for the most vulnerable communities (Winkler et al, 2017). This is critical especially now that most renewable energy projects find themselves under pressure and growing expectations to contribute to socio-economic development of local communities where they operate (Funder et al, 2021). This research seeks to explore and interrogate distinctive features of renewable energy development in South Africa to consider the extent to which climate finance investments in the REIPPPP have created conditions for a just transition to energy justice, climate justice and socio-economic justice in the remote, vulnerable and marginalised communities of Prieska, Marydale, Niekerkshoop and Copperton (Davies, 2022).

Generally, a fair and just transition in South Africa can only be realised if climate finance investments promote a comprehensive concept of justice that includes procedural justice, distributive justice, and recognition justice (Climate Investments Funds (CIF), 2020).

Although South Africa has shown commitment in the transition to low carbon development, challenges remain because the just transition does not only require transformation of the current energy system, but it also needs assurance that no one is left behind in the transition. This study is undertaken under the flagship of the Southern African Climate Finance Partnership (SACFP), facilitated by SouthSouthNorth. SACFP is a capacity enhancement and knowledge sharing platform for southern African countries seeking to access international climate finance to mobilise investments into a low-carbon economy and a just society.

This research was influenced by my interest in socio-economic development issues in vulnerable and marginalised communities, particularly in remote and rural areas. My work as a researcher for a small non-profit organisation (NPO) based in Cape Town, South Africa, which aims to accelerate the just transition in Africa, was additionally influential. Being a human geographer, I have taken a spatial socio-economic approach in this research to provide an analysis of the extent to which climate finance investments in renewable energy in Siyathemba Local Municipality (SLM) is contributing to socio-economic development in order to promote and advance a just transition and South Africa's development objectives at the local municipality level.

To achieve these objectives, I explore whether climate finance mobilised to support the decarbonisation of South Africa's energy sector and the socio-economic development of local economies has contributed to enabling a just transition at a local municipality level in the hidden landscape of the Upper Karoo region. The study adopts a critical qualitative research approach, which is thought to be essential given that the need for social, energy and climate justice has never been greater (Denzin and Lincoln, 2018). To conduct this research, I selected SLM in the Upper Karoo region in the Northern Cape as a case study. SLM is host to some of the largest renewable energy projects in South Africa, part of the country's REIPPPP. At present, five renewable energy projects including three solar PV projects and two wind farms, are located within SLM, namely Mulilo Sonnedix Prieska PV, Garob Wind Farm, Copperton Wind Farm, Mulilo Prieska PV and

Mulilo Renewable Energy Solar PV. All are situated in Copperton, previously a mining town now in transition following the rollout of these renewable energy projects.

Like most of South Africa's remote and rural local municipalities, SLM is confronted by critical challenges such as high unemployment, poverty and inequality. The municipality was initially a farming and mining region. However, these activities have declined significantly over the years. The withdrawal of the copper and asbestos mines from the area in the early 1990s led to a substantial drop in the local economy (Siyathemba Local Municipality (SLM), 2022). The municipality has been further affected by extreme drought, which has had a negative impact on livestock farming. However, the municipality offers potential for extensive large-scale irrigation farming because of its location on the banks of the Orange River (SLM, 2022). Agriculture, tourism, mining and manufacturing remain critical economic activities in the local municipality. In 2016, the municipality had a total population of 23 075 (Statistics South Africa, 2018). At the national census in 2011, 60% of the population in SLM lived below the minimum living wage, while statistics from 2011 show unemployment at 24.3%, with youth unemployment (15-34) rated as high as 30.2% (Statistics South Africa, 2018).

In line with the country's REIPPPP, the municipality was identified as one of the pilot areas for the development of solar parks. As a result, the area has received considerable amounts of climate finance investments in solar PV and wind farms. However, even though renewable energy projects are being implemented in order to achieve a just pathway to decarbonising the country's electricity sector, it remains unclear whether these resources are trickling down to local communities in line with REIPPPP policy. Researchers such as Walker (2019) have argued that what is clear though is that the development of renewable energy projects in the region has far-reaching consequences not only for the social, economic and environmental health of the region, but also for South Africa's national development trajectory. It is therefore important to understand the role of climate finance investments in supporting a just transition, especially in a country such as South Africa, which has high levels of poverty, unemployment and inequality, and where the state owned electricity utility is struggling to keep the lights on and operates as a regulated monopoly (Winkler, 2021).

Baker (2014) argues that the socio-economic benefits of climate finance investments in the REIPPPP at local community level remain unclear and require further research. This dissertation aims to fill the knowledge gap by providing empirical evidence about whether climate finance investment in the REIPPPP in SLM is attributable / or not attributable to a just transition at local municipal level. This is achieved by interrogating and disentangling the problems, opportunities and challenges associated with the effective distribution of climate finance investments in renewable energy development to the socio-economic development of local communities in SLM. The study takes into consideration the theoretical frameworks of a just transition, which advocates that no one should be left behind in the transition.

In this research I argue that the socio-economic contribution of the REIPPPP has been largely ineffective in advancing a just transition at the local community level in SLM. This is primarily because the IPPs in SLM appear to follow a top-down approach of development that is welfare driven. As a result, the socio-economic contributions of the REIPPPP do not necessary empower or equip the local communities with the necessary skills to enable them to meaningfully participate in and benefit from the just transition. The findings from this study indicate that most of the programmes that are supported by the IPPs in SLM are welfare driven. This means that they take a hand-out and risk minimising approach, which exacerbates feelings of hopelessness and a recipient mentality among poor communities (Morar, 2019). As a result of the ineffectiveness of the REIPPPP in promoting a just transition in SLM, people on the ground continue to live in poverty, while unemployment and inequality remain persistent challenges. For example, a significant proportion of the population in SLM remains dependent on social grants for survival, notwithstanding significant climate finance investments in renewable energy that aim to contribute to the national development agenda of decarbonising the energy sector together with local socio-economic development. In its plans for creating job opportunities and boost local economic development, SLM is currently developing strategies to fully benefit from renewable energy development in the municipality. This is mentioned in the Integrated Development Plans (IDPs) of the municipality.

1.2 Problem statement: Is climate finance reaching those who need it the most?

Understanding whether climate finance is reaching local actors is critical for both climate finance and socio-economic development (Gutiérrez and Gutiérrez, 2019). However, the literature

suggests that there are knowledge gaps in assessing whether climate finance is having an impact at the local community level. Soanes et al (2017) argue that despite sizeable climate finance investments from different sources there is still no conclusive understanding of whether these resources are trickling down to local communities. According to Anantharajah and Setyowati (2022):

> until the benefits of climate finance, especially in terms of equity and justice, can be empirically grounded in the developing world context, the discursive claims of high-level climate finance agents will remain unchecked, and the lived implications of climate finance will remain unclear (Anantharajah and Setyowati, 2022, 3).

It is therefore essential that the socio-economic impact of climate finance investments in renewable energy development is understood at the local community level in order to determine whether climate finance is contributing to a just transition, especially in terms of equity and justice. Due to the vulnerability and marginalisation of local communities where renewable energy projects are located in South Africa, it is important that they benefit appreciably from climate finance investments. The costs and benefits of the just transition must trickle down to local communities in order to advance the process. On the other hand, the role of local actors in facilitating a just transition at a local level must be visible. This requires effective mechanisms to be designed that will create benefits aimed at socio-economic development of local communities, which can empower those who are marginalised in the economic development process (Funder et al, 2021).

Although much research has been conducted about South Africa's just transition, most of the conversations about the transition have tended to focus on the coal value chain regions, the phasing out of coal-fired power plants and associated coal mines, and the envisaged impact on affected groups (Montmasson-Clair, 2021). At the same time Geddes and Schmit (2020) argue that the role of finance in promoting the just transition has not been emphasised in research. Instead most of the research conducted has focused on the energy and technology aspects of transitions. Nonetheless, global studies have been conducted at several levels, including regional, country-specific, rural electrification programmes and project specific studies (Dane and Mabaso, 2022).

In the context of South Africa, the REIPPPP is criticised by Davies (2022) for not being sufficient for realising a just transition. However, Davies cautions that drawing conclusions about the failure

of the REIPPPP to realise the just transition in South Africa in its early stage "would be to miss out on what can be yielded in a generative inquiry into what has been made possible by this novel, albeit somewhat problematic, procurement programme" (Davies, 2022, 193). In this sense, this research seeks to contribute to existing literature by exploring the socio-economic impacts of climate finance investments in renewable energy development in SLM. This is done in order to critically scrutinize and discuss the role that climate finance has played has played in advancing a just transition in SLM.

At present there is little evidence about whether local communities are benefiting from a just transition, even though the transition is required to embrace the socio-economic needs of countries, especially vulnerable communities, that are affected by climate change (International Labour Organisation (ILO) 2015 in Winkler et al, 2021). Research that seeks to provide empirical evidence on whether climate finance mobilised for mitigation purposes is benefiting local communities is necessary in South Africa. It is even more urgent now that financial investments in the energy sector are expected to contribute to addressing the country's triple-helix challenges of poverty, unemployment, and inequality, while simultaneously transitioning from fossil fuels to clean renewable energy (Nkoana, 2018). To contribute to emerging literature on climate finance and a just transition, this study adopts a bottom-up approach to investigate the effectiveness of climate finance deployed in renewable energy development to promote climate justice at the local municipality level (Anantharajah and Setyowati, 2022).

1.3 Limitations of the study

The REIPPPP is in its infancy, with many of the renewable energy projects in South Africa at the start of their commercial operations. This is the case in SLM, where two of the five renewable energy projects located in the municipality began commercial operations in the last quarter of 2021, just a few months before the data collection for this study commenced. This means that these companies have not made any significant socio-economic contributions to local communities beyond the construction phase. The data collected for this research is limited since only three projects were able to provide detailed information about the socio-economic contributions made to SLM communities, apart from jobs created during the construction phase and benefits accruing to local businesses who provided goods and services during the construction phase.

Moreover, given the complexity and dynamism of renewable energy development in South Africa, it is important to consider all the implications of the REIPPPP when attempting to explore its impact on local communities. This includes environmental issues associated with the development of renewable energy projects. In this study I have explored the socio-economic contributions of the REIPPPP in SLM to understand whether the climate finance investments in renewable energy development have contributed to advancing a just transition at the local municipality level. However, it is important to note here that in future it will be critical to link environmental and social impacts of renewable energy development in order to grasp the impact of climate finance in socio-economic development.

Initially one of my intentions was to follow the money invested in renewable energy development in SLM, as this might provide an understanding of the climate finance flows in renewable energy and socio-economic developments in SLM. However, the obstacles encountered in accessing the financial reports of IPPs in SLM made it difficult to calculate how much money has actually been spent by the IPPs in the socio-economic development of local communities. This exercise would have been critical in this research in order to understand whether the money that has been directed towards socio-economic development of local communities in SLM has been effective in promoting a just transition at the local municipality level.

1.4 Research objectives

The primary aim of this research is to explore the extent to which climate finance mobilised to support renewable energy development in SLM has managed to advance a just transition at the local municipal level through supporting socio-economic development and addressing injustices of the past.

The objectives of the study are:

1. To explore and interrogate the effectiveness of climate finance in addressing socio-economic development issues in South Africa.
2. To unpack the challenges and problems associated with effective distribution of climate finance investments in renewable energy development at the local municipal level.
3. To map the key stakeholders involved in renewable energy development in SLM.

4. To investigate whether climate finance investment in renewable energy development has translated into long-term sustainable socio-economic opportunities in SLM.

1.5 Brief introduction to the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

South Africa's national government launched the REIPPPP in 2011. Since then, the programme has gained international recognition for its strong socio-economic development policy component. In addition to ensuring that South Africa's energy security challenges are addressed through the procurement of additional electricity generating capacity from renewable energy sources, the REIPPPP policy seeks to promote socio-economic development through a set of criteria IPPs must meet in local communities where their operations are located (World Wide for Nature (WWF), 2015).

The REIPPPP's weighting of the socio-economic development component earned the programme worldwide attention. Given the complicated issues confronting South African communities, the REIPPPP's socio- economic component is critical. In the REIPPPP, IPP contributions to socio-economic development are weighted at 30% throughout the bidding process, with local community ownership being one of the variables assessed (Baker and Wlokas, 2014). To ensure that socio-economic development is prioritised, bidders must commit to socio-economic development of local communities within a 50km radius of the project (Baker, 2014).

To date, the REIPPPP has played an important role in broadening and strengthening the just transition debates in South Africa, with energy, power, and financial policy taking center stage in transition discussions (Davies, 2022). The REIPPPP is one-of-a-kind. It takes a top-down approach, requiring some project ownership and benefits for local communities via large-scale wind, solar, hydro and biomass energy plants (WWF, 2015). Job creation, local content, ownership, management control, preferred procurement, enterprise development (ED), and socio-economic development are all components of the REIPPPP (Davies and Wlokas, 2022). Figure 1 shows the expected socio-economic contributions of IPPs to the local communities in which they operate.

	Economic Development Elements	Minimum Threshold	Maximum Target	Description
1	Job creation – SA citizens	Various indicators		Number of jobs help by local citizens
	Lob creation (local area)	12% of RSA employees	20% of RSA employees	
2	Local content	DIffers by technology		This refers to the capital costs and costs of services procured for construction minus the finance charges, land and mobilisation fees of the contractor (DoE, 2011b)
3	Ownership (overall black ownership requirement)*	12% of project shareholding	30% of project shareholding	The percentage of company ownershio measured through shares and other instruments that provide the holder with economic benefits such as dividends or interest payments (DTI, 2004)
	Ownership (community ownership requirement)	2.5% of project shareholding	5% of project shareholding	
4	Management control	0	40%	The effective control of a company with reference to 'top management' (DoE, 2011b)
5	Preferential procurement	Various indicators		The procurement of goods and services from suppliers that are BBBEE compliant.
6	Enterprise development (ED)	0	0.6% of project revenue	Supporting the development and sustainability of black-owned businesses.
7	Socio-economic development (SED)	1% of project revenue	1.5% of project revenue	Financial contributions to socio-economic development initiatives that promote access to the economy by black people.

Figure 1: Economic development criteria of the REIPPPP as in the first issue of the Request for Proposals (RFP) in August 2011. Source: WWF, 2015 adapted from DoE, 2011.

1.6 Structure of the dissertation

This dissertation is divided into eight chapters. Each chapter is further divided into sections.

Chapter One: Introduction

This chapter sets the scene for the research. The chapter provides an overview of the research context and situates this study within existing academic literature. This chapter seeks to inform the reader about the nature, scope and extent of the research. The chapter begins by highlighting the challenges of climate change in South Africa. This is followed by a discussion of the triple-helix challenges of poverty, unemployment and inequality. The next section discusses South Africa's policy responses to climate change and the triple-helix challenges. This is followed by a discussion about climate finance investments in renewable energy development and the effort to attain a just transition in South Africa's vulnerable and marginalised communities. This section discusses my own positionality as a researcher for this study and provides a justification for undertaking this

research, followed by a discussion about the limitations of the study. Next, I list the objectives and conclude by providing a brief background to South Africa's REIPPPP.

Chapter Two: Theoretical perspectives

The first part of this chapter defines climate finance and discusses the linkage between climate finance and a just transition. This is followed by an outline of the theoretical frameworks that have influenced just transition thinking and practice over the years. The next section provides a detailed discussion about South Africa's REIPPPP. The chapter concludes by summarising the academic literature on the relationship between renewable energy transitions and the politics of land in South Africa and globally.

Chapter Three: Locating the study area: Background to Siyathemba Local Municipality

This chapter provides a background to the study area, which is SLM. The chapter seeks to locate the study area within the Northern Cape province of South Africa. Importantly this chapter seeks to review the socio-economic status of the study area in order to demonstrate the plight of the local communities and provides a justification for why this municipality is relevant for this study. The chapter reveals that despite the renewable energy development that is taking place in SLM, communities continue to experience poverty and unemployment, while the majority of the population continues to depend on social grants for survival. The chapter concludes by profiling the key towns in SLM, looking at their history, current challenges and their importance within the SLM.

Chapter Four: Research methodology

This chapter outlines the methodology that was adopted for collecting data for the study. The chapter gives a detailed discussion explaining why the research method used in this research was selected. It discusses the data collection methods used, and the approach to data analysis. The chapter also describes the journey of fieldwork, highlighting problems encountered while arranging interviews and conducting fieldwork. The chapter concludes by discussing the ethical considerations related to conducting a qualitative research study.

Chapter Five: Re-industrialisation of Siyathemba Local Municipality through climate finance investment in renewable energy development

Drawing on findings and analysis, this chapter seeks to focus on climate finance by discussing how much has been invested in renewable energy development in SLM. It looks at the IPP companies operating there, and profiles their renewable energy projects. The chapter discusses the key stakeholders in renewable energy development in SLM, in order to understand and explore their roles in enabling a just transition in SLM.

Chapter Six: The promise of a just transition: Who's transition is it anyway?

This chapter seeks to discuss whether the promise of a just transition by climate finance investments in renewable energy projects in SLM has been achieved. The chapter explores the promises of climate finance in SLM through the REIPPPP contribution to socio-economic development. It discusses the perceived lack of skills in SLM, which have been identified by various stakeholders as a key hindrance to achieving a just transition. The chapter further probes the high expectations created by climate finance investments among local communities and businesses. It concludes with a discussion about whether climate finance investments in renewable energy development in SLM have managed to achieve a just transition in accordance with the just transition principles of distributive justice, procedural justice and recognition justice.

Chapter Seven: Micro community dynamics and the framing of the socio-economic impacts of renewable energy development in Siyathemba Local Municipality

This chapter seeks to highlight what is happening on the ground in SLM. The chapter discusses community struggles and social dynamics among key stakeholders involved in renewable energy development in SLM and unpacks the socio-economic benefits of renewable energy development. It provides an illustration of the complex and complicated engagements between various stakeholders in renewable energy development in SLM. Notably the chapter seeks to understand how the engagements and interactions among key stakeholders involved in renewable energy development result in the success or failure of achieving socio-economic benefits in SLM. The chapter discusses monitoring and reporting processes in renewable energy development. It

concludes by laying out some ideas about the relationship between renewable energy development and land in South Africa.

Chapter Eight: Conclusion

The chapter reflects upon and summarises the principal arguments of the research. It provides suggestions and a pathway for attaining a just future as a result of climate finance in South Africa, particularly in relation to the aspect of renewable energy development. It argues that despite climate finance flows in renewable energy development in SLM, the benefits of the just transition are hardly visible in the small towns of Prieska, Marydale, Niekerkshoop and Copperton.

CHAPTER TWO: THEORETICAL PERSPECTIVES

2.1 Introduction

To form a theoretical framework for this research I have explored the literature on climate finance and in relation to the notion of the "just transition". This was done in order to understand the linkage between climate finance and a just transition. Both climate finance and the just transition are emerging notions in the field of social science. For this research my ideas have been informed by the thinking of researchers and academics such as Heffron, McCauley, Sovacool and others who have written extensively about how climate finance in the global south creates inequalities, exclusions and injustices among vulnerable and marginalised communities. To understand the arguments and debates around the just transition and climate finance in South Africa's REIPPPP my thinking has been influenced by researchers and academics such as Wlokas, Swilling, Davies and others. The ideas drawn from these researchers and academics have been pivotal in this research as they have enabled me to interrogate and discuss whether the climate finance investments in South Africa's REIPPPP, particularly in SLM, have advanced a just transition at the local municipality level or whether they have exacerbated existing inequalities and injustices in local communities.

In this research I seek to bring the just transition concept into climate finance discourse (Korsgren and Mollema, 2021). This is critical in order to explore the correlation between climate finance and a just transition and to understand how climate finance has emerged as the driver of the just transition at international, national and local levels. According to Korsgren and Mollema (2021) climate finance should promote the just transition by contributing to the sustainability of the environment, social justice and equity, and the protection of human rights particularly in marginalised and vulnerable communities. This is important for South Africa's renewable energy development since the majority of the renewable energy projects in the country are located in remote and vulnerable communities that are confronted by the challenges of unemployment and poverty.

Firstly, this chapter seeks to provide a comprehensive understanding of climate finance as a precursor to a just transition. The second section conceptualises the just transition in an attempt to explain its emergence and to understand the confusion around its definition. This is followed by a

discussion about the importance of the co-benefits in the just transition. The next section discusses the theoretical frameworks that have influenced just transition thinking and practice over the past few years to lay out the challenges and problems associated with the just transition. This is followed by a detailed discussion of South Africa's REIPPPP, which is designed to promote and advance the just transition in South Africa, especially in vulnerable communities such as SLM where renewable energy projects are located. The chapter concludes with a critical discussion about the relationship between renewable energy development and land to interrogate and explore the injustices of renewable energy development in the just transition.

2.2 Defining climate finance

At present there is no agreed upon definition of climate finance. The most widely used definition is the one provided by the United Nations Framework Convention on Climate Change (UNFCCC), which defines climate finance as "local, national, or transnational financing drawn from public, private, and alternative sources of financing that seeks to support mitigation and adaptation actions that will address climate change" (Hong et al, 2020, 1011). Korsgren and Mollema (2021) argue that despite such definitions being provided and approaches for enabling climate finance being developed on a global stage, the concept of climate finance remains a broad and dynamic concept. In the context of this research climate finance is understood as finance that is geared towards covering the cost of the transition to a low carbon economy, to help countries and communities to adapt to or build resilience against the impacts of climate change (Cassim et al, 2021).

At the UNFCCC's 15th Conference of the Parties (COP15) in Copenhagen in 2009, developed countries committed to jointly mobilising $100 billion in climate finance per year from public and private sources by 2020 for the needs of developing countries (Clapp et al, 2012; Westphal et al, 2015). Yet mobilised climate finance continues to fall short of the $100 billion commitment. Between 2017 and 2018 global climate finance flows amounted to an average of $574 billion, with the renewable energy sector attracting the largest climate finance investments (Climate Policy Initiative (CPI), 2020). In 2019, CPI estimated an increase of up to $608 – $622 billion of global climate finance (CPI, 2020). The table below illustrates the framework for understanding climate finance.

Table 1: Framework for understanding climate finance. Source: Korsgren and Mollema, 2021.

What is the type of finance?	**Development aid, private equity, loans etc.**
What is the source of finance?	Public or private sources
Where does the finance flow from and to?	North-North, South-South, North-South
What is financed?	Mitigation, adaptation, compensation for loss and damage or a combination of both
What kind of finance?	New or additional finance

Debates on what should be termed climate finance are ongoing. For instance, Korsgren and Mollema (2021) assert that some researchers argue that only finance with primary climate objectives should be counted towards the $100 billion goal made in 2009. Others argue that any finance with substantial climate objectives should count as climate finance. Zadek (2019) argues that because of its historical coining, climate finance was initially understood as finance directed at addressing climate as well as other goals. However, that understanding has evolved over the years. Zadek explains that climate finance

> was largely understood in the context of the international climate negotiations, and to be defined and measured as part of efforts to determine and drive respective national responsibilities and accountabilities. Over time, as domestic resource mobilization and the role of private financing has become more visible, the idea of climate finance has evolved to embrace the bigger picture. Today, it more generally includes financing that intentionally or unintentionally has a positive climate impact. In that sense, climate finance

> has become more diverse and amounts to a far greater number in aggregate (as well as being far more difficult to add up) (Zadek, 2019, 23).

The main premise of climate finance is to deliver additional financial costs that are needed to deliver low carbon and climate resilient options for both countries and local communities (Nakhooda, 2019). According to Anantharajah and Setyowati (2022) climate finance promises to deliver four key benefits:

- To drive economic opportunities and open new markets for the private sector.
- To generate attractive investment returns for investors.
- To deliver local socio-economic benefits (job creation, entrepreneurship opportunities) for the local population alongside climate mitigation and adaptation.
- To reduce the impact of climate change on the poor (Anantharajah and Setyowati, 2022).

Climate finance should aim to enhance the effectiveness and fairness in the just transition. To ensure that climate finance trickles down to the local actors, South Africa's renewable energy procurement policy requires the IPPs to provide a strategic plan showing how local communities will benefit from the project (COBENEFITS, 2019). Communities located within a 50km radius of the project must benefit from jobs created through implementation, community development initiatives, enterprise development and community ownership in renewable projects (Leigland and Eberhard, 2018; COBENEFITS, 2019). Theoretically, the REIPPPP has a strong localisation element. The programme's use of localisation is consistent with global standards and can result in positive impacts on socio-economic development if it is well executed. However, the REIPPPP is criticised for using its localisation requirements for public relations purposes, thereby risking its long-term local socio-economic benefits for short-term political support (Leigland and Eberhard, 2018).

Although climate finance promises to deliver on the aforementioned benefits, it is important to note that it is difficult to assess whether it has managed to deliver on these promises, especially at the local community level. For instance, Soanes et al (2017) mention that despite significant climate finance from different sources there is still no understanding about whether climate finance

is trickling down to local communities. Anantharajah and Setyowati (2022) argue that climate finance discussions occur at a high level. As a result, the implications of climate finance remain unclear. Korsgren and Mollema (2021) acknowledge that there are pitfalls that need to be avoided by policy makers in order to ensure that climate finance contributes to the desired outcomes of the just transition by reaching the most marginalised communities who are in desperate need of effective mitigation and adaptation investments. Drawing conclusions from the arguments in the climate finance literature reviewed for this study, it is clear that the impact of climate finance investments at the local community level is not fully understood, while there is still no agreed upon definition for the concept of climate finance. As a result, conducting this study is important to add to the body of knowledge already available on climate finance and a just transition. The next section of this chapter explores the just transition concept to understand its emergence, and its linkage with climate finance.

2.3 Conceptualising the just transition

The just transition idea has become popular in academic literature during the last few years. Law and geography are the two primary academic fields that address the concerns of just transition, according to Heffron and McCauley (2018). They contend that while geography is concerned with where and when the effects of injustices in the transition occur, law is concerned with questions of fairness in the transition (Heffron and McCauley, 2018). Along with these two research areas, it is crucial to recognise that governments and scholars from diverse fields support the notion of the just transition (Lo, 2021).

It is vital to recognise that the just transition framework is not a new concept in climate change debates. The American labour movement created the just transition framework in the 1970s and 1980s to include a variety of social interventions required to safeguard employees who lost their jobs as a result of environmental protection measures (Lager et al, 2021; McCauley and Heffron, 2018; Smith, 2017). Following the establishment of environmental protection legislation in risky industries, labour groups fought for a just transition to protect jobs for workers and communities (Wang and Lo, 2021; Smith, 2017).

At present the concept is not clearly defined, and it therefore remains unfamiliar to many people. Definitions vary widely and there are no comprehensive methods set out for achieving the just

transition (Korsgren and Mollena, 2021). Alongside recognisable concepts such as sustainable development and the green economy, the just transition notion has evolved in recent years and has subsequently become a "buzz phrase" accepted and used by governments, businesses, developmental organisations, civil society and academics. At present, much of the research on the just transition is concentrated on coal mining and coal dependent industries (Lo, 2021; Ghosh et al, 2022). Lo (2021) states that most empirical studies on just transition have been conducted in developed countries. This leaves a sizeable research gap for regions that are not dependent on coal, and in developing countries such as South Africa where coal mining is a significant economic contributor.

According to McCauley and Heffron (2018) a just transition is considered as a fair and equitable process of moving towards a post carbon society. Baker (2020) broadens this term by emphasising that a just transition entails shifting from a globalised capitalist industrial economy to linked local living participatory economies that seeks to ensure the wellbeing of all citizens. By realigning just transition theory and practice with the existing structure of power and governance and elevating the voices of marginalised groups, a fair transition can be realised (Baker, 2020). Every member of society should share in the transition's expenses and rewards. Korsgen and Mollena (2021) argue that the just transition concept should not only entail what the transition should look like but extensively detail how the just transition should be carried out to ensure that no one is left behind.

As a result of the increase in climate-related disasters, environmental and climate justice organisations and civil society actors have embraced the idea of a just transition under their own terms (Velicu and Barca, 2020). Beyond labour protection, the idea of just transition was expanded to include a broader view of society, with a focus on the weakest and most marginalised people. As it became evident that a just transition should focus on people, many of whom are vulnerable and may not be able to afford the expense of the transition, it was necessary for the management of societal consequences to emerge at the centre of a low carbon development agenda (Velicu and Barca, 2020).

The just transition idea originated in South Africa with the Congress of South African Trade Unions (COSATU) 2011 Policy Framework on Climate Change. In light of the fact that COSATU recognised climate change as a social and developmental concern, it was agreed that a just

transition was necessary to safeguard workers' jobs and livelihoods (COSATU, 2022). In order to realise workers' rights within social and climate justice, COSATU reaffirmed that the "fair transition must address high rates of poverty, inequality, and unemployment while enhancing environmental sustainability" (COSATU, 2022, 6).

COSATU's paper advocated for workers and vulnerable individuals and communities to be prioritised in South Africa's just transition. Since then, the just transition has been at the heart of South Africa's development discourse. In 2020 the presidency set up the Presidential Climate Commission (PCC) to oversee and facilitate South Africa's just transition pathway. By 2022 the PCC released the first Just Transition Framework for South Africa, which formed the first attempt to carefully articulate and define how an inclusive low carbon development could be achieved in South Africa. At COP27 the South African government launched the Just Energy Transition (JET) Investment Plan formulated under the Just Energy Transition Partnership (JETP), which was signed the previous year (at COP26) between South Africa, France, Germany, the United Kingdom, the United States of America and the European Union to secure support for South Africa's just transition ambitions. This five-year cooperation will begin in 2023 and last until 2027 and is anticipated to serve as South Africa's blueprint for a just transition and climate finance moving ahead. These actions demonstrate that since its emergence in South Africa the just transition discourse "has entered South Africa's mainstream political discourse, starting with its roots in the labour movement and moving into policy deliberations, academic research, civil society organisations, private-sector positioning and community resistance" (Davies, 2022, 181).

2.4 The socio-economic component of the just transition

Communities should come before profits in the just transition in order to prevent escalating inequities within communities (Baker, 2020). This necessitates substantial local socio-economic outcomes from climate initiatives that go above and beyond the intended climate advantages, such as reducing carbon emissions (CIF, 2019). These gains, which are frequently referred to as "co-benefits", might help to make the argument for additional climate finance, even though they are challenging to measure and assess (CIF, 2019). Considering the historical injustices of the past in South Africa, it is imperative that the just transition be centred around local community struggles. This can help to address local adversities such as inequalities in income, energy access and

responsibility for emissions, rising prices of food and electricity, poverty and unemployment (Oxfam, 2013).

Jobs, better health, higher economic activity, market growth, skills development and transfer, entrepreneurship development, empowerment, and effects on gender equality are among the "co-benefits" of the just transition (CIF, 2019). Local community climate actions should open socio-economic doors for the local population. For instance, Okkonen and Lehtonen (2016) argue in their article on the development of renewable energy in rural communities in Northern Europe's peripheries, that renewable energy rollout should result in socio-economic opportunities for farmers and rural communities who are marginalised. It should contribute to raising incomes and generating employment opportunities to support local economic development. The just transition in the context of South Africa is framed as a pathway that seeks to lessen the effects of job losses and industry phase-outs on workers and communities in the coal value chain, as well as a tool for creating new, green and decent jobs, sectors and healthy communities throughout the nation (Smith, 2017).

For the socio-economic benefits of the transition to be realised at the local community level there is a need to promote local participation in development processes. This can help to promote acceptance within local communities. However, for renewable energy projects to viably promote local participation, they need to establish social enterprises aimed at fulfilling social purposes and working towards the social good of communities where their operations are located (Okkonen and Lehtonen, 2016). In South Africa's REIPPPP, as part of contributing to the socio-economic development of local communities, renewable energy projects are required to set up community trusts, which are designed to respond directly to community needs and challenges when it comes to the distribution of socio-economic benefits by renewable energy companies.

2.5 Theoretical frameworks that have influenced the just transition thinking and practice

This section discusses some of the theoretical frameworks that have influenced just transition thinking and practice over the years. The theoretical frameworks discussed here form a key aspect of this research; these include climate justice, energy justice and environmental justice. According to Heffron and McCauley (2018) there has been little research done to link these three concepts of justice. This is notwithstanding the fact that these ideas – often referred to as CEE – are widely

acknowledged by researchers as having shaped just transition thinking and practice. All of these theoretical frameworks seek to ensure fair treatment of the most marginalised and vulnerable people affected by the transition (Baker, 2020). The phrase "just transition" emphasises "justice" for all. Justice has long been embedded in the international community's response to climate change and the mobilisation of financial support for adaptation and mitigation measures in impoverished nations (Lager et al, 2021).

Justice is a crucial component of the transition, but Heffron and McCauley (2018) argue that governments, businesses, institutions and scholars frequently talk about the shift to a low carbon economy without evoking justice. There have been several conceptualisations of justice over the past few years from many research fields, including the communities of scholars in the climate, energy and environmental fields (Heffron and McCauley, 2018). To advance a just transition, Heffron and McCauley (2018) make the case for combining these three fields of study. If these theoretical frameworks are combined, the just transition can apply justice in the fields of climate, energy and environment to eliminate inequality and poverty in societies (Heffron and McCauley, 2018). This would ensure that the just transition achieves human well-being and sustainability (Swilling et al, 2016). The following sections of this chapter discuss these conceptual frameworks, namely climate justice, energy justice and environmental justice, which are the concepts that have been used in the literature to advance and influence the concept of just transition.

2.5.1 Energy Justice

Energy justice is concerned with the application of human rights across the energy life cycle (Heffron and McCauley, 2018). It aims to eradicate energy poverty by providing safe, affordable and clean energy for all. Energy justice seeks to enhance social responsibility of the public and the private sector to ensure that the benefits of the transition are equally distributed in a manner that leaves no one behind (Heffron and McCauley, 2014). Energy justice literature argues for the equitable distribution of the benefits and burdens of decarbonisation in order for equity concerns to be addressed ahead of the energy transition (Baker, 2020; Sovacool et al, 2017). Energy justice advocates for minimising energy-related costs while maximising the benefits of the energy transition, as well as exploring strategies that can be effective in distributing the benefits and burdens of the energy transition in a fair and just manner. Finally, it seeks to ensure that decision-

making is inclusive of all stakeholders and consistent with the legal procedures of low carbon technology transition (Forman, 2017).

Some examples of (in)justice in the context of low carbon energy technology projects include location of infrastructure, access to energy services, developmental opportunities, how people perceive the development initiatives in their communities and how much people actually pay for the energy (Mundaca et al, 2018). Aside from the energy justice work regarded as having great merit in understanding the just transition, there are some shortcomings (Sovacool et al, 2017). Jenkins identifies two major weaknesses:

> Firstly, whilst the concept has been used as a mobilizing tool, it lacks defined and recognised content – a structure or approach that can be readily applied at a range of scales in a systematic manner. Secondly, because of the way the concept has been used, it has not achieved much environmental protection or conservation. Instead, the main motivation of the movement has been the effect on less affluent areas – a concern for people, not their environment (Jenkins, 2018, 118).

Energy justice research is predominantly concerned with three fundamental forms of justice (Baker, 2020; Bouzarovski and Simcock, 2017). These include distributive justice, procedural justice and recognition justice. Procedural justice refers to access to process. It is more than a seat at the table; it requires community members and those impacted by energy development to have a say in shaping the course of development. The idea of procedural justice in energy transition literature is derived from social and environmental justice literature, which criticises the theory of justice for solely focusing on the distribution of material goods to communities and ignoring other aspects such as involving communities in the just energy transition conversations (Simcock, 2016). In their investigation of the low carbon transition at a community level in Samsø, Denmark, and Feldheim, Germany, Mundaca et al (2018) identified consultation, information sharing, decision making and outcomes as the key areas of procedural justice in the context of low carbon technology transition.

Simcock (2016) argues that these participatory processes are inherent and necessary for any development intervention project that is implemented in a community. Despite procedural justice being key in the development of low carbon technology transition, it is difficult to ensure that it is

successfully implemented when designing a low carbon intervention at a local community. For instance, in the case study of the Norton community wind project in South Yorkshire, United Kingdom, Simcock (2016) points out that although respondents mentioned that a community poll was conducted before implementation to ensure there was a clear mandate and the project could proceed legitimately through a thorough community consultation process, there was mixed opinion from some residents who felt that the project had consulted only a small proportion of the community, and that most voices had been excluded. The unwillingness to give voice to all the local actors generates resistance and lack of owning initiatives that are developed for the community.

Distributive justice examines the benefits and burdens of development (Baker, 2020). According to Jenkins et al (2016) distributive justice in energy justice pushes the researchers to explore where energy injustices occur in the world by considering which sections of society are ignored or misrepresented in the energy transition. In an examination of the energy transition in Germany, Jenkins et al (2016) found that Germany's energy transformation strategy Energiewende, which is aimed at decarbonising the energy sector and phasing out nuclear power from the energy mix, raises concerns of distributional justice. Jenkins et al (2016) further argue that the cost of the strategy, which utilises feed-in-tariffs (FITs) designed to be profitable for the producers of renewable energy, negatively affects consumers as they are expected to pay more for their electricity. This increases the financial burden on low income communities, as they pay a large portion of their income towards energy costs.

Recognition justice is concerned with understanding the different types of vulnerabilities and the needs associated with energy services among social groups (Lee and Byrne, 2019). Although recognition justice is comparable with procedural justice it goes further by acknowledging the distinctive harms to a particular community or population (Baker, 2020), especially marginalised and vulnerable communities (Lee and Byrne, 2019). Writing on energy justice in the United Kingdom, Jenkins et al (2016) argue that recognition (in)justice was evident in the United Kingdom's policy on fuel poverty. They argue that policymakers in the United Kingdom have started to recognise the distinct needs of specific social groups such as the elderly and the chronically ill in energy services provision (Jenkins et al, 2016). It is important that recognition justice in energy justice pays special attention to instances of misrecognition in energy policy

responses (McCauely et al, 2016). This would in turn ensure that vulnerable and marginalised social groups are not excluded in energy justice services.

Although South Africa launched its ambitious REIPPPP in 2011, it is still not clear whether the country will achieve energy justice. Baker (2014) indicates that IPPs feed directly to the national grid and therefore do not cater to the 30% of the population that is not connected. Another issue is that although the REIPPPP's goal is to diversify the energy mix in the country, the programme contributes to an electricity-intensive model that does not address the issues of affordability at a household level (Baker, 2014). The high cost of electricity in South Africa disproportionately affects the poor and vulnerable; although they may have access to electricity, they cannot afford to purchase it. According to the National Planning Commission (2019) almost 47% of South Africa's population is considered energy poor, as they spend more than 10% of their household income on energy needs. Oxfam (2013) further explains that rising food and electricity prices in South Africa hits the poor hardest, as the poorest households in South Africa spend almost 40% of their total income on food and electricity, compared to less than 7% for the richest South Africans. This means that decarbonisation in South Africa is not yet just as it excludes the low, working and middle classes.

2.5.2 Climate Justice

Climate justice is concerned with "sharing the benefits and burdens of climate change from a human rights perspective" (Heffron and McCauley, 2018, 74). Environmental justice was the predecessor of the concept of climate justice. Climate activists developed the idea of "climate justice", which aims to ensure that the lessons of environmental injustices are learnt and incorporated into social policy at the local, national and international levels, after realising the injustices created by climate change globally (Mohai et al, 2009). In order to promote climate justice and a just and equitable transition, climate justice aims to bring together the challenges of climate change at the grassroots level of the environmental justice movement and the hazards associated with it (Jenkins, 2018). In contrast to environmental justice, which was grounded in local struggles, climate justice debates are predominantly at an international level (Jenkins, 2018).

Advocates for climate justice call for the development of policies that mitigate the effects of climate change and support communities in long-term adaptation to those effects. Climate justice

is not only alarmed by environmental issues that are affecting communities but goes further by acknowledging that social inequalities are being exacerbated by the climate crisis (Wang and Lo, 2021). To fund adaptation efforts in poor nations, particularly for tackling climate-related challenges among vulnerable people, climate justice pushes the world's largest carbon emitters to pay climate finance (Burnham et al, 2013). However, climate justice finance is criticised for exacerbating climate change on a global scale. For example, when rich nations and industries are allowed to purchase carbon offsets they are allowed to continue polluting (Bond, 2012 in Burnham et al, 2013).

Despite its growing influence on a global stage the concept of climate justice has received some criticism. For instance, Jenkins (2018) argues that some scholars critique its limited application of climate change policy, which hides its potential for successful application in local and small scale settings where it can hold great promise. Jenkins (2018) further argues that although this might be the case,

> counter arguments may come as the defense that the concept is understood and used in different ways due to different understandings and manifestations of (in)justice – a perhaps understandable diversity (Jenkins, 2018, 6).

Globally various climate justice movements have emerged to push for climate justice. These include organisations such as Climate Justice Alliance and Climate Justice Now. Wang and Lo (2021) state that the emergence of these organisations has contributed to the integration of climate justice with just transition. In addition, these organisations have resulted in the creation and strengthening of a diversity of international environmental justice and human rights networks (Mohai et al, 2009).

In South Africa climate justice activism has grown significantly over the years. As a result of accelerating climate change impacts in the country, various climate activist movements in South Africa developed the Draft Climate Justice Charter in 2020. The aim of the movement is to push Parliament to adopt the Climate Justice Charter as part of South Africa's constitution. According to the movement:

> The Climate Justice Charter emerges from six years of campaigning, during the worst drought in South Africa's history, by the South African Food Sovereignty Campaign and the Cooperative and Policy Alternative Centre. It has been informed by grassroots input from water stressed communities, the media, labour, faith based communities, youth, climate scientists, academics, women's organisations, environmental and social justice organisations, as well as think pieces by leading activists (Climate Justice Charter Movement, n.d.).

The goal of the charter is to prevent harm to or imposition of costs on individuals who are not at fault for climate change. Therefore, the Climate Justice Charter places the most marginalised and at-risk groups at the forefront of the fair transition conversation in South Africa, including workers, persons with disabilities, landless people, grassroots women, children and vulnerable communities (Climate Justice Charter Movement, n.d.). Jenkins (2018) claims that while the concept of climate justice has emerged, conversations about it have not actually resulted in any

> internal coherence on the purpose and form of the climate justice concept, nor achieved climate justice for any particular individuals or groups. Moreover, where positive examples do occur, they remain small scale and too disparate to face larger, immediate climate challenges and risks (Jenkins, 2018, 7).

Hence, she calls for a more manageable framing of the concept to address the climate crisis (Jenkins, 2018).

2.5.3 Environmental Justice

The idea of environmental justice first appeared in North America in the 1970s as a response to the disproportionate distribution of environmental problems brought on by pollution and waste facilities in neighbourhood communities, which were primarily inhabited by people of colour and the poor (Jenkins, 2018). Environmental activists in the United States turned to the environmental justice movement as a means of mobilisation in reaction to environmental degradation (McCauley et al, 2016). After the wider uptake of the environmental justice concept in the United States in the early 1980s, activists and policy makers started to observe parallel patterns of environmental inequality around the world, thus taking the concept across the globe (Mohai et al, 2009). Initially

the environmental justice concept was concerned with the environmental (in)justices that were imposed on local communities deemed vulnerable and voiceless (Jenkins, 2018).

All citizens should be treated fairly and included in the creation, implementation and enforcement of environmental laws, policies and regulations, according to the urgent need for environmental justice (Heffron and McCauley, 2018). Therefore, over time, environmental justice literature has placed a strong emphasis on preserving the environment, preserving the dignity of at-risk local populations, and emphasising the significance of participation and representation in the development process (Velicu and Barca, 2020). The environmental justice movement, which has been at the forefront of the battle for marginalised and disadvantaged populations who are severely impacted by environmental degradation, has always served as the foundation for environmental justice (Wang and Lo, 2021). Overall, environmental justice has consistently sought to protect marginalised and vulnerable groups, including workers, people of colour, those with low socio-economic status, and those who are negatively affected by environmental factors including pollution, toxic waste dumps, and other locally unwanted land uses (LULUs) (McCauley et al, 2016). Environmental justice emerged as a regional, activist-driven and neighbourhood-focused movement (Jenkins, 2018).

At present it is problematic to determine whether the environmental justice movement has been a success or a failure since it emerged in the 1970s (Jenkins, 2018). In the context of South Africa, McDonald (2007) argues that the environmental justice movement can be characterised both as failure and success. This is attributed to the reality that although most environmental challenges and injustices in South Africa are located in townships, the environmental justice movement is dominant in urban spaces. In South Africa billions of rands have been channelled towards biodiversity conservation, where wilderness areas remain a magnet for thousands of tourists who visit the country annually (Patel, 2009). Patel (2009) further argues that the legacy of environmental harm in South Africa has left a trail of environmental injustice in black communities with some of these injustices incurred primarily by black workers. Many communities in South African cities have inherited the impacts of poor land-use planning from the apartheid era. Black communities in South Africa continue to suffer from social and environmental injustice due to the historical underdevelopment and neglect of their living environment (Scott and Oelofse, 2005).

The neglect of poor communities when it comes to environmental justice in South Africa persists to this day. In the coal mining regions of provinces such as Mpumalanga, local communities continue to live at the receiving end of environmental degradation as the result of coal mining activities. For instance, air pollution has been recognised as a serious problem in Mpumalanga, while acid mine drainage has a devastating impact on the water quality in the region (Akinlabi et al, 2019). Such environmental (in)justices has a catastrophic effect on local communities mostly occupied by black and poor South Africans. Despite these environmental injustices, McDonald (2007) acknowledges that environmental thinking in South Africa has changed over the years. Contemporary thinking acknowledges the environment as a place where people live and work, rather than merely a playground for the middle class. This mode of thought has resulted in the emergence of the environmental justice movement in South Africa, which aims to protect vulnerable and voiceless communities from environmental injustices.

2.6 Renewable Energy Independent Power Producer Procurement Programme (REIPPPP): A policy intervention to decarbonise South Africa's energy sector and contribute to socio-economic development.

2.6.1 Overview of the REIPPPP in South Africa

To accelerate the just transition South Africa has focused on decarbonising its energy sector, which is dependent on coal powered electricity generation. The transition to renewables in South Africa promises to deliver vast socio-economic benefits for local communities. In 2011, as means of responding to the country's NDP and Integrated Resource Plan (IRP), South Africa launched the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) in an effort to procure alternative sustainable energy, while also contributing to socio-economic development of local communities. Initially the introduction of renewable energy into South Africa's energy sector was conceived in the form of the renewable energy feed – in tariff (REFIT). However, the country opted for REIPPPP, which is a competitive tender process designed to facilitate private sector investment into grid-connected renewable energy generation (Baker and Wlokas, 2015; Eberhard and Naude, 2017). The REFIT was the first attempt by the South African government to introduce renewable energy sources to the energy sector, but it never took off. This was due to Eskom's lack of support for the programme and uncertainties about its nature of procurement and licensing process (Eberhard and Kåberger, 2015).

In the wake of the launch of the REIPPPP, South Africa became one of the world's leading destinations for renewable energy investment (Baker, 2015). Since the launch, the programme has attracted more than R200 billion in debt and equity investment, R1.5 billion has been invested by renewable energy companies into socio-economic development of local communities across the country, while more than 59 000 jobs have been created (Independent Power Producer (IPP) Office, 2021a). REIPPPP has been lauded globally as a flagship procurement programme for renewable energy that can be emulated by other countries (Baker, 2015), particularly countries seeking to decarbonise their energy sector. The REIPPPP is the first renewable energy programme that has managed to gain meaningful traction at the national level (Eberhard, 2013), attracting a crowd of private developers and investors domestically and abroad (Baker and Wlokas, 2015).

To be granted an opportunity to supply renewable energy IPP bids must deliver energy output from a specific technology for a period of 20 years at a fixed price (Ayamolowo et al, 2022). Bids from the IPPs are scored based on price and socio-economic development criteria. The score for pricing is 70%, while 30% is based on the socio-economic development criteria, which include local job creation, participation of local communities (specifically historically disadvantaged individuals), protection of local content, local manufacturing, community involvement/ownership, skills development of the local population and rural development (Baker, 2015). If the IPP meets the requirements at the lowest price and has submitted a bid with robust socio-economic development impact, it is awarded the contract. The bid submitted by the prospective project developer wins the contract based on the pricing cap, which decreases in each round of the bidding window (Baker and Wlokas, 2015).

The REIPPPP is implemented by the IPP unit on behalf of the Department of Energy (DoE). This unit was specifically set up by individuals within the National Treasury for the sole purpose of implementing the programme. Successful bidders in the programme sell their renewable electricity to Eskom for a period of 20 years through a Power Purchase Agreement (PPA), which is government-backed (Baker, 2014). The PPA is a contractual agreement between an IPP and a client to sell and buy power. In the case of South Africa's REIPPPP the contract/agreement is signed between Eskom and individual IPPs. REIPPPP includes allocations for a range of technologies such as solar photovoltaics (PV), concentrated solar power (CSP), onshore wind, small hydro and landfill among others. To date, most of the capacity allocated is for onshore wind,

solar PV and CSP. By the first quarter of 2021, the programme had completed seven bidding rounds (BW1–BW4, 1S2 and 2S2) (IPP Office, 2021a). By that time, 91 projects were active, of which 79 projects were operational and had added 5 078MW generation capacity to the national grid (IPP Office, 2021a). These figures demonstrate that South Africa is in line with pursuing its national target of energy mix outlined in the IRP.

The IRP, which was updated in 2019, calls for an electricity generation mix comprising 33 364MW (42.6%) coal, 17 742MW (22.7%) wind, 82 88MW (10.6%) solar PV, 68 30MW (8.7%) gas or diesel, 5000MW (6.4%) energy storage, 4600MW (5.9%) hydro, 1860MW (2.4%) nuclear and 600MW (0.8%) CSP by 2030 (IPP Office, 2021a). The target of renewable energy to the South African energy mix is 17 8000MW by 2030. Overall, the REIPPPP has achieved several objectives since it was initiated. For instance, the programme has made a considerable contribution to renewable energy generation in South Africa. However, the socio-economic component of the programme has not been clearly examined to determine its impact on socio-economic development in local communities where the renewable energy projects are located. Although billions have been invested in REIPPPP, communities located close to the projects remain confronted by high unemployment, inequality and poverty.

2.6.2 Socio-economic development elements in the REIPPPP

One of the key elements that make the REIPPPP unique when compared to other renewable programmes across the world is its strong component of local socio-economic development criteria, which is defined as initiatives carried out by IPPs in order to promote access to the economy by black and local people (Wlokas et al, 2012). As already mentioned, projects that bid for REIPPPP are scored 70% on pricing and 30% on their local economic development contributions (Baker and Wlokas, 2015). The socio-economic aspect in REIPPPP is important when considering the country's high levels of inequality, poverty and unemployment (Baker and Wlokas, 2015). It is therefore important to understand to what extent the REIPPPP will empower local communities and bring meaningful socio-economic development to the historically marginalised and excluded groups in South Africa. This criterion is critical for South Africa since the majority of renewable energy projects are located in rural municipalities that are confronted by the aforementioned challenges. This is why it is important that economic inclusion of the local communities in the REIPPPP should be prioritised when a contract is awarded to the bidder.

To ensure that socio-economic development is prioritised, bidders are required to commit to socio-economic development of communities located within a 50km radius of the project (Baker, 2014). Bidders are required to include a needs assessment of communities living where the project will be located, including action plans on how the project will respond to local socio-economic needs. When submitting a bid, four criteria of development need to be considered by the bidder. These include enterprise development, socio-economic development, local ownership and job creation (Baker and Wlokas, 2015). As already stated economic development criteria in the REIPPPP account for 30% of the bid evaluation process. This 30% is broken down into different segments. For instance, 40% must be committed towards local content, meaning that goods and services must be sourced from South African companies, while local communities must have a minimum of 2.5% shareholding and a minimum of 1.5% must be committed to development programmes that will support socio-economic improvement within the identified local communities. Further, project developers must commit 0.6% towards enterprise development (ED) in the form of support for small- and medium-sized enterprises or business skills training (Baker and Wlokas, 2015; Wlokas et al, 2012).

Such policy efforts in the REIPPPP are laudable as they aim to ensure that the benefits of the transition are equitably distributed in the country. In order to achieve the targets that are set out in the REIPPPP procurement process project developers are required to understand the local context. Therefore, sufficient and strong relationships must be established at an early stage between project developers and local communities to ensure that measures set out in the socio-economic development (SED) plans of the projects are appropriate for the local context (Wlokas et al, 2012).

From a policy perspective, the socio-economic development criteria of the REIPPPP are authoritative. They clearly outline how the programme should contribute to socio-economic development in communities in terms of job creation, supporting socio-economic programmes and so on. However, in practice there is a knowledge gap in how these criteria are monitored and evaluated during the programme life cycle, so as to assess the extent to which the programme achieves the desired socio-economic outcomes at local community level (Nyawo, 2019). Presently the only reporting on the socio-economic impact of the REIPPPP in South Africa is compiled by the IPP office, which in turn depends on the annual reporting submitted by the renewable energy projects to the DoE. Since REIPPPP was launched in 2011, it is still not clear who is monitoring

whether the renewable energy projects are complying with the economic development criteria set out in the procurement process.

2.6.3 Challenges encountered by REIPPPP in South Africa

Albeit lauded as one of the world's most successful renewable energy programmes, the REIPPPP has been confronted by various challenges that continue to derail the programme since its inauguration in 2011. The REIPPPP has been subjected to various delays including issues related to Eskom's reluctance to sign PPAs, deliberations about tariff levels, mistrust of renewable energy by various factions including those in government and perceived financial risks (Baker and Wlokas, 2015). Such issues have had a negative impact on the programme. For example, in 2015, the programme was halted after Bid Window 4.5 when the management of Eskom at that time raised concerns about the cost of the renewable energy power and refused to sign the PPAs with IPPs.

In 2015, the management of Eskom argued that the programme was causing it indefensible financial strain because the utility was compelled to buy electricity from IPPs at prices that it did not negotiate (Miller, 2016). To make matters worse for the programme, the decision made by Eskom to not sign the PPAs was supported by the former Minister of Public Enterprises Lynne Brown (Njobeni, 2017). After a long deliberation between Eskom and the IPPs the PPAs were eventually signed by Eskom in 2018, signalling an end to a long negotiation between the power utility and the IPPs (Heap, 2018). Such actions reveal power contestations within the programme and among stakeholders, which may have a negative impact on the successful implementation of the programme in the long run.

In addition to the challenges that the programme has faced, there is a concern that South African companies or developers may be excluded from the programme because of aspects such as pricing. For instance, Baker (2015) argues that the increased competition in Bid Window 4 saw many small South African firms being priced out of the market as they were unable to compete with the low costings offered by foreign companies with more financial power. Baker (2015) argues that the programme is becoming the domain of equity investors and foreign utilities. This threatens the economic development component of the programme as foreign dominance can lead to the extraction of capital from South Africa, as has been witnessed in other sectors of the economy. In

this context there is a danger that some foreign companies might view the REIPPPP as an investment opportunity rather than a programme that is meant to push South Africa's agenda of driving low carbon development and just transition.

According to Baker and Wlokas (2015), countries that have had a footprint in South Africa for some time are progressive in the socio-economic development aspects of the programme. Other companies see the socio-economic development criteria as a transaction cost. For instance, Baker and Wlokas (2015) mention that one of the renewable energy company representatives was quoted as saying "don't bother me with your Africa problems" (Baker and Wlokas, 2015, 21). Such utterances by company representatives have negative implications for the spin off benefits of REIPPPP, as it suggests that the socio-economic development aspects of the programme are not taken seriously. Such challenges are an obstacle in the meaningful implementation of socio-economic development and community ownership criteria (Baker, 2015). Baker and Wlokas (2015), argue that oftentimes it is difficult to explain the socio-economic development components of the programme to foreign developers, especially those related to black economic empowerment and socio-economic development.

To accelerate community engagement and improve their socio-economic contributions to local communities, some companies have contracted development consultants and community liaison officers (Baker and Wlokas, 2015). This has been a strategy of foreign developers who have no experience of the challenges faced by South African communities (Baker and Wlokas, 2015). Although such measures have been taken by some companies it is still not clear whether employing consultants and community liaison officers has led to improved socio-economic development in local communities. In some cases, consultants hired by project developers are not from the same communities they wish to develop. This might have a negative impact on development as in some cases these consultants are not welcomed by local communities.

The other serious complication facing REIPPPP is that South Africa is running out of transmission capacity. Provinces such as the Northern Cape are not able to connect new renewable energy generation projects to the national grid. According to Eskom's latest Generation Connection Capacity Assessment (GCCA) (2021) there is no available capacity for renewable energy to be connected to the Northern Cape grid. Most renewable energy projects in South Africa are located

in the Northern Cape to take advantage of its open spaces and abundant solar and wind resources. According to Eskom the power corridors of the Greater Cape area comprising the Western Cape, Northern Cape and Eastern Cape networks are constrained and only limited generation can be accommodated in addition to what has already been approved in REIPPPP (Eskom, 2021). This can be attributed to Eskom's constrained financial resources that limit its ability to expand its grid infrastructure. The power utility requires about R118 billion to expand the transmission grid by 8000km across the country (Ormajee, 2021). Figure 2 depicts the transmission capacity remaining in each province in South Africa. Such challenges may hinder the programme's ability to deliver socio-economic benefits to local communities.

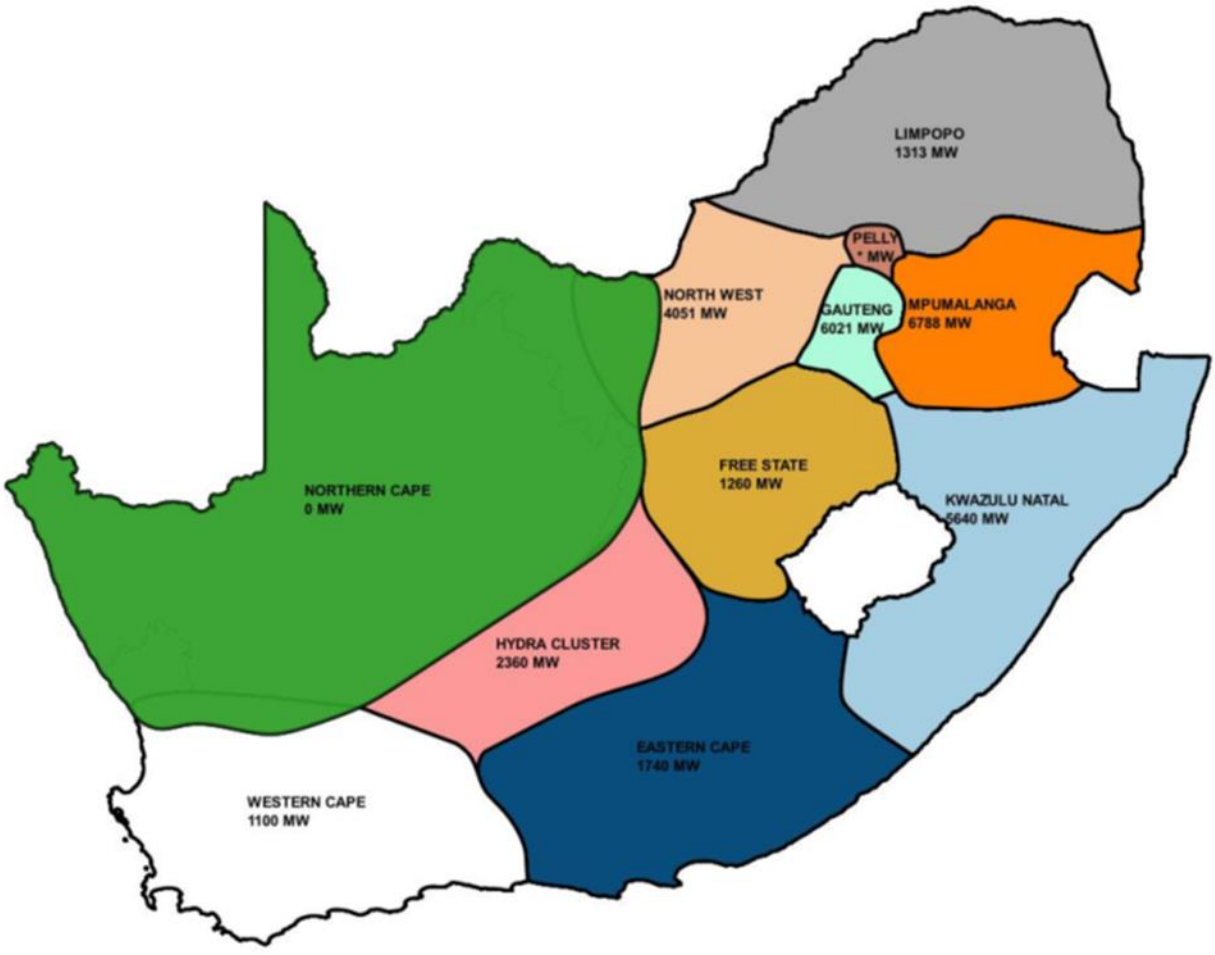

Figure 2: Available supply area capacity in South Africa. Source: Eskom, 2021.

2.7 Renewable energy transitions and the politics of land

Land tenure is a critical issue when looking at the history and contemporary politics of renewable energy development interventions in South Africa. Land ownership in the REIPPPP is particularly important in defining the beneficiary community and designing community benefit structures where socio-economic development revenues are to be channelled (Wlokas et al, 2012). The land question within public debate about renewable energy interventions is crucial because land is of urgent political sensitivity and salience in South Africa (McEwan, 2017). A bidder can only submit a bid in the REIPPPP once land rights have been secured and the bidder is able to provide evidence of the lease agreement and proof of land application (DoE in McEwan, 2017). This process reflects the importance of land in renewable energy development in South Africa. This is a significant aspect of the REIPPPP designed to ensure that the programme is separated from land debates or the possibility of land grabs for renewable energy projects as discussed in Ye (2022) and Grain, (2013).

Most renewable energy projects in South Africa are built on commercial farmland, which is rented from farm owners. In some cases, the land rented to renewable energy developers was previously used for grazing. Farmers leasing land to renewable energy companies can compromise production and output. Walker (2019) notes that the practice of livestock farming in regions such as the Karoo in the Northern Cape is being jeopardised by investments in projects such as renewable energy and the Square Kilometre Array radio telescope (SKA). Like the SKA project, the renewable energy development is envisaged to contribute to the national development objectives. However, local communities where renewable energy projects are located hardly see the benefits, whether in the form of significant job opportunities or access to “cheaper, cleaner and more efficient” household energy (Chinigò and Walker, 2020, 395).

According to McEwan (2017) leasing agreements between farmers and developers only serve the interests of commercial (mainly white) farm landowners. This issue is not only applicable in South Africa’s renewable energy development. For instance, writing on the renewable energy development in Karnataka in India, Ghosh et al (2022) found that the lease agreement between the renewable energy developers and landowners (farm owners) in Karnataka only offers financial benefits to the farm owner, while inappropriately affecting the farm labourers who are employed on the farm. In addition to compromising farming practices, Capellán-Pérez et al (2017) state that

dedicating land to produce renewable energy does not only threaten the preservation of natural ecosystems and their services and biodiversity but also threatens the land use to cover human needs such as food, infrastructure, fiber and so on.

Academic literature has revealed that globally there are a variety of associated land use conflicts such as environmental and socio-economic implications in dedicating land for renewable energy development (Ghosh et al, 2022; Golubchikov et al, 2016; Scheidel and Sorman, 2012). Such issues need further investigation in order to understand the implications of renewable energy development on land tenure in South Africa. In the context of South Africa renewable energy has direct implications for land use and profitability, including the potential to further politicise land ownership (McEwan, 2017). In the context of Charanka Solar Park in Gujarat in India, Golubchikov et al (2016) call for a re-examination of social justice issues in the renewable energy development space as it affects the livelihoods of populations.

The literature on energy transition has posited the issue of a "global land rush" in energy transitioning and its potential to undermine societal land needs and further escalate or motivate cases of land grabbing (Scheidel and Sorman, 2012). Cotula et al (2011) argue that land grabbing as a result of increasing demand for renewable energy is a threat in developing countries where food insecurity is rising and land rights are weak. Land grabbing in renewable energy development is likely to affect marginalised and underrepresented communities.

In South Africa no case of land grabbing has been reported as a result of renewable development. However, in some developing countries land grabbing for renewable energy development has been reported. For instance, land grabs have been reported in countries such as Sierra Leone, Brazil, Indonesia, Guinea, Mexico and Ghana where communities or farmers have been forcefully displaced in order for big companies to produce biofuel (Grain, 2013). Recent media reports in China state that a renewable energy company forcibly seized the land of local farmers in order to install solar panels (Ye, 2022). As already mentioned such cases take place in marginalised and remote communities where people are often unaware of their land rights and there is poor political mobilisation. Such issues weaken the importance of the "just" component within the process of energy transitions and intensifies social inequality as people are forced to relinquish their livelihoods sourced in the form of agricultural land.

In South Africa the renewable energy transitions literature has paid greater attention to the potential of renewables to address the energy challenges facing the country at present. This has also been the case in some other developing countries such as India, where renewable literature has focused on the promise of solar to address India's need for clean, affordable and reliable energy (Bambawale and Sovacool, 2011 in Golubchikov et al, 2016). The implications of the uptake of renewable energy on land and spatial landscapes is often ignored in the literature. However, McEwan (2017) mentions that renewable energy transitions in South Africa are confronted by the land injustices of the past and the prevailing politics of land. Therefore, it is important to understand the relationship between renewable energy interventions and land acquisition. This is particularly important since most of the renewable energy projects in South Africa are located in rural or peri-urban areas where historical land injustices are deep-rooted.

According to McEwan (2017) the claims involving REIPPPP projects demonstrate that the land injustices of the past cannot be erased in South Africa's energy transition. For instance, he draws the attention to the assertion by Forder (2015), who states that the

> Tsitsikamma Community Wind Farm near Wittekleibosch in the Eastern Cape, [was] built on land where amaFengu people were forcibly removed under apartheid in the 1970s. The community returned to the land after a claim was lodged in 1994 and is now a 9% shareholder of the wind farm (Forder, 2015 in McEwan, 2017, 5).

Understanding the correlation between land injustice in the past and renewable energy development in the present is vital in South Africa to ensure that vulnerable communities are not negatively impacted by renewable energy development. It is therefore critical that the land question in renewable energy development is explored extensively in order to ensure that the transition in South Africa does not result in further injustices around land.

In South Africa land is the key resource towards ensuring that the national ambition of expanding the uptake of renewable energy is achieved. The government has identified different geographical zones known as Renewable Energy Development Zones (REDZ) that are deemed important for the expansion of South Africa's energy mix. The REDZ were developed to identify geographical areas that are best suited for the rollout of renewable energy projects. They are critical in conceptualising the spatial politics of renewable energy transitions and their consequences in

South Africa. The country has large tracts of unused land that are considered unproductive for agriculture or mining. This land is a vital resource in the ambit of renewable energy development (Eberhard and Naude, 2017).

Many renewable energy projects in South Africa are located in sparsely populated regions such as the Northern Cape, while densely populated and needy eastern and north-eastern provinces such as Gauteng, KwaZulu Natal and Mpumalanga have fewer renewable energy projects (McEwan, 2017). The South African government identified rural areas and remote small towns as the key hubs for renewable energy development, as this is seen as a viable option for promoting economic development. These areas host some of the most vulnerable members of South Africa's population who do not have access to economic opportunities and where there is little or no private investment (Leigland and Eberhard, 2018).

To protect the rights of the communities in geographical areas that have been identified as REDZ, the South African government has developed robust policies that are aimed at protecting the rights of the landowners. For instance, to correct the injustices of the past, the state has amended the Restitution of Land Rights Act of 1994 to allow dispossessed communities to stake a claim for land restitution and/or a share of the lease payments accruing from the REIPPPP (McEwan, 2017). The amendment of this Act illustrates that the land injustices of the past in South Africa cannot be erased from the REIPPPP. It is therefore important to conceptualise and understand the spatial processes of the renewable energy transition and its relationship to the land question in South Africa (McEwan, 2017).

2.8 Conclusion

This chapter has reviewed what theorists and researchers have written on the subject of climate finance and a just transition as a discursive construct. In order to comprehend how climate finance affects supporting a just transition in South Africa's vulnerable and marginalised communities, an attempt was made to find the notions of climate finance and just transition within social science literature. In order to better understand how climate finance is conceived of and described as a precursor of a just transition, it is significant that this chapter has discussed global literature on the subject. The first part of this chapter presented detail about what climate finance is and what it is used for. The second section laid out what is included in the idea of the just transition and

conceptualises it. This discussion has shown that, while it has become more prevalent in academic literature in recent years, the just transition is not a novel idea. Theoretical frameworks that have dominated and affected just transition literature, such as energy justice, climate justice, and environmental justice, were covered in the next section. These frameworks have played a significant role in influencing just transition discourse over time.

In order to promote a just transition at the local community level, this chapter has discussed South Africa's REIPPPP in detail, explaining how it attempts to mobilise climate funding and address the socio-economic difficulties local communities face. This section has shown that, although the programme has failed to effectively encourage a fair transition at the local community level, South Africa's REIPPPP is intimately linked with just transition practice and thinking. The chapter concludes by examining the relationship between the development of renewable energy sources and land to determine whether there have been land injustices caused by renewable energy development. This was deemed necessary in this study because SLM is a landscape that is transitioning and where renewable energy projects are being built in private areas that were previously used for livestock farming. Although certain injustices occurred in some countries in the course of the switch to renewable energy, no instances of land-related injustice were discovered in South Africa. The location of the SLM study area is covered in the following chapter. To better understand why climate finance investments in renewable energy in SLM are essential for fostering a just transition in the nearby small towns of Prieska, Marydale, Niekerkshoop, and Copperton, it is crucial to provide a background on the study region.

CHAPTER THREE: LOCATING THE STUDY AREA: BACKGROUND TO SIYATHEMBA LOCAL MUNICIPALITY

3.1 Introduction

This chapter provides a background to the study area Siyathemba Local Municipality (SLM), which is situated in the Northern Cape province of South Africa. The chapter contextualises SLM and the towns located within the municipality. It seeks to review the socio-economic status of the area and its geographical location. This is undertaken to validate why this local municipality is relevant for this study. The chapter begins by locating the study area within the Northern Cape and Pixley Ka Seme District Municipality. Next it describes the population and demographics of the

area, and then explores its socio-economic status. This section explores the livelihood status of the municipality by looking at employment, economic activities, social status and service provision in SLM. The chapter concludes by profiling the key towns in SLM, looking at their histories and challenges and their importance within the SLM.

3.2 Profiling Siyathemba Local Municipality

3.2.1 Locality of the study area

Siyathemba Local Municipality (SLM) is a local municipality located on the banks of the Orange River in the Northern Cape Province's Upper Karoo region (SLM, 2022). The word "Siyathemba" means "We believe" in isiXhosa (Atkinson, 2007). The Northern Cape is South Africa's largest province in terms of land area. It has a relatively small population in comparison to other provinces. There were 1 193 780 million people living in the Northern Cape as per the 2016 Household Survey (Statistics South Africa, 2018). The Northern Cape province consists of five district municipalities and twenty-six local municipalities. The map in Figure 3 depicts the district municipalities and local municipalities in the Northern Cape. The province shares boundaries with four other provinces, namely the Free State, North West, the Eastern Cape and the Western Cape. The Northern Cape shares international borders with Botswana and Namibia.

The economy of the Northern Cape is dependent on agriculture, manufacturing, construction and mining. However, the focus for socio-economic development has been on the following key sectors of the economy: agriculture and agro-processing, fishing and aquaculture, mining and mineral processing, manufacturing, tourism, the knowledge economy and energy (Global Africa Network, 2019). The Global Africa Network asserts that the province's six leading competitive advantages are the primary causes of this transformation. These advantages include the seashore, good air quality, wide open areas, conducive distances and significant natural resources (Global Africa Network, 2019).

Figure 3: District and local municipalities in the Northern Cape province. Source: https://commons.wikimedia.org/wiki/File:Map_of_the_Northern_Cape_with_municipalities_named_and_districts_shaded_(2016).svg

Within the Northern Cape, SLM is part of Pixley Ka Seme District Municipality. SLM is one of the eight local municipalities that fall under the jurisdiction of Pixley Ka Seme District Municipality. The other local municipalities are Siyancuma, Thembelihle, Renosterberg, Kareeberg, Emthanjeni, Umsobomvu and Ubuntu. The map in Figure 4 depicts the location of Pixley Ka Seme District Municipality and the local municipalities mentioned above including the key towns in each local municipality.

Figure 4: Pixley Ka Seme District Municipality and key towns. Source: https://municipalities.co.za/map/137/pixley-ka-seme-district-municipality

Like other small local municipalities across South Africa, SLM is dealing with several developmental obstacles that are endangering its future. SLM continues to face serious problems ranging from poverty, unemployment, income inequality, poor social services and low educational levels (SLM, 2022). These issues do not only affect SLM; they affect the entire Northern Cape province. According to Atkinson et al (2017), the Northern Cape province as a whole faces considerable social and economic inequality; it is home to a population with limited resources and a general demand for work.

SLM encompasses a geographic area of about 8200km², meaning that it accounts for 8% of the total district surface area and approximately 3% of the provincial area of the Northern Cape (SLM, 2022). In accordance with the 2001 demarcation process of local government, SLM is a Category B Municipality (NC077) established in 2001 (SLM, 2022). SLM incorporates the former municipal areas of Prieska, Marydale and Niekerkshoop. However, after the demarcation of

municipalities it was extended to include the town of Copperton (SLM, 2022). These four small towns, even the more prosperous like Prieska, bear the heavy burden of social problems ranging from high unemployment, poverty and extreme dependence on government social grants. The profiles of these four major towns will be further discussed in the last section of this chapter. The municipality was previously a farming and mining district, but these industries have declined over time. The decline is attributed to the closure of the copper and asbestos mines in the region, and the local economy has suffered in recent years. For instance, after the mine closed, the ancient mining village of Copperton was sold to a private owner (SLM, 2022). However, there has been considerable interest in restarting the mining sector in SLM. The mining rights for the Prieska Copper-Zinc Project were granted to the Australian company Orion Minerals. At present, Orion Mining is completing its feasibility studies in a bid to resume mining operations in the area.

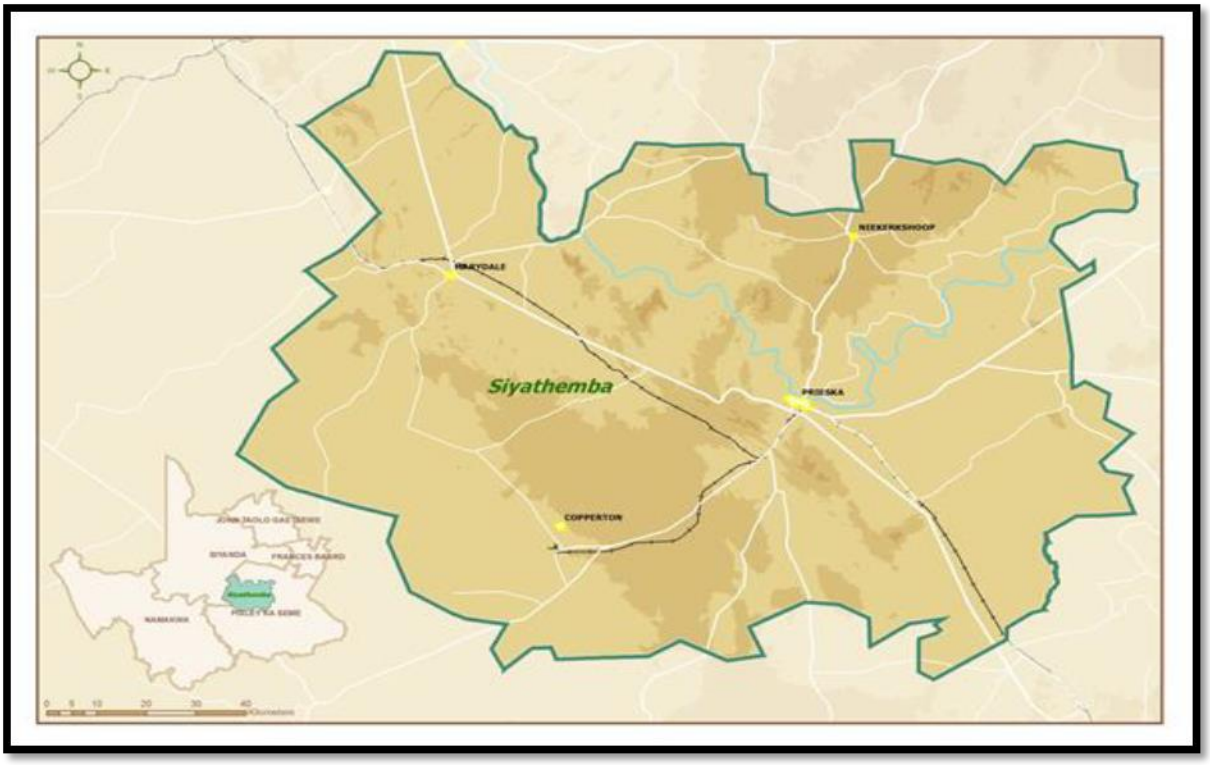

Figure 5: Location of the four small towns in Siyathemba Local Municipality. Source: Siyathemba Local Municipality, 2022.

3.2.2 Population and demographics

According to Statistics South Africa (2011), SLM had a local population of 21 591 in 2011. The population increased to 23 075 in the household survey of 2016 (Statistics South Africa, 2018). In

terms of population size SLM has the fourth largest population in Pixley Ka Seme District Municipality. Table 2 depicts the total population size in all eight local municipalities under the jurisdiction of Pixley Ka Seme District Municipality between 2011 and 2016. All the local municipalities in Pixley Ka Seme experienced population growth between 2011 and 2016, apart from Siyancuma Local Municipality, which experienced a decline of 0,7%.

Table 2: Total population in local municipalities in Pixley Ka Seme District Municipality between 2011 and 2016. Source: Statistics South Africa, 2018.

Local Municipality	Total Population 2011	Total Population 2016	Growth by %
Siyathemba	21 591	23 075	1,5
Kareeberg	11 673	12 772	2,0
Ubuntu	18 601	19 471	1,0
Umsobomvu	28 376	30 883	1,9
Renosterberg	10 978	11 818	1,7
Emthanjeni	42 356	45 404	1,6
Thembelihle	15 701	16 230	0,8
Siyancuma	37 076	35 941	-0,7

In terms of population demographics, the working population age group 15-64 makes up the largest percentage of the population. In 2016 this group accounted for 69.6% of the total population, while the age group 0-14 and 65+ contributed 24.4% and 6% respectively to the total population of SLM (Statistics South Africa, 2018). The dominant population group in SLM is Coloured. This group represents about 80% of the total population, while Black Africans and Whites represent 12% and 8% respectively (SLM, 2022). As a result of the predominance of the Coloured population in the municipality, Afrikaans is the most widely spoken language. In many instances, it is the language of communication in the municipality followed by English and isiXhosa. Other languages are spoken, such as Setswana and isiNdebele, but these are not significant since most residents understand or speak Afrikaans. There is a slightly more balanced gender ratio in the SLM. For instance, in 2011 females accounted for 51% of the total population, while males accounted for 49% (Statistics South Africa, 2011).

3.2.3 Employment and education in Siyathemba Local Municipality

Despite having one of the smallest populations in South Africa SLM is faced by significant impediments including high unemployment, low skills and low literacy levels, absence of disaster management units and a substantial housing backlog (SLM, 2022). As in the rest of South Africa and the Northern Cape, unemployment is a serious concern. According to Statistics South Africa (2011) the overall unemployment rate in SLM was at 24.3%, with youth unemployment (15-34) being slightly higher at 43,1% (SLM, 2022). Most of those who are employed work in the government services sector (accounting for about 1700 workers), followed by agriculture (which accounts for about 1100 workers) and the trade and industry sectors (which accounts for about 670 workers) (Quantec Research, 2012 quoted in SLM, 2022).

Figure 6 depicts the employment demographic of three towns in SLM (excluding Copperton). Copperton is excluded from the unemployment statistics as there are only about 50 people living there (the population of Copperton will be discussed in detail in the following sections of this chapter). It is important to note here that the data presented in Figure 6 is based on the research that was conducted by Knowledge Pele for Copperton Wind Farm's Socio-Economic Needs & Assets Assessment published in 2022. Their statistics are not based on statistics provided by Statistics South Africa, but are drawn from focus group interviews conducted by Knowledge Pele

in the three towns in SLM. This is also the case in the data that is presented for social grants recipients and levels of education in SLM.

The issue of unemployment in SLM is perpetuated by a lack of education, with the least educated members of the population being the ones experiencing the highest incidence of unemployment and poverty. According to the Household Survey of 2016, 7.1% of the population in SLM had no schooling, while only 20.7% had a matric certificate as a qualification and only 5.4% of the population had higher education (Statistics South Africa, 2018). According to the Household Survey of 2016 only 29.9% of persons aged between 15-24 years were attending school while 70.1% were not attending school (Statistics South Africa, 2018).

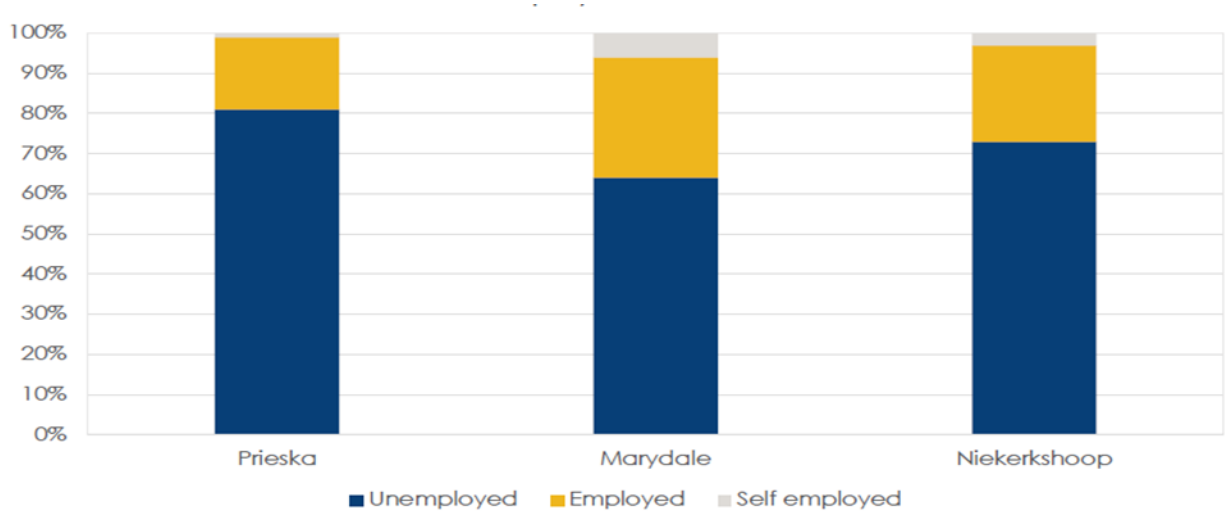

Figure 6: Employment status in Prieska, Marydale and Niekerkshoop. Source: Knowledge Pele, 2022.

3.2.4 High dependency on social grants within Siyathemba Local Municipality

The high level of joblessness in SLM means that many residents are the beneficiaries of social grants. Most recipients receive child support and old age grants. This indicates that the municipality's local communities are broadly dependent on social grants (and other transfers) for their livelihoods, while there are relatively few individuals who depend on monthly incomes when social grants and other transfers are combined. The dependence on social benefits is not exclusive to SLM. For instance, Atkinson and Kotze (2017, 24) note that across the Karoo, the "government grant system" is an essential element supporting local livelihoods. Across all race groups there are significant numbers of elderly living in these towns and drawing state pensions, which are used to

support children and grandchildren (Atkinson and Kotze, 2017, 24). In 2016 the total percentage of social grant recipients in SLM was 49% (Statistics South Africa, 2018). Figure 7 shows the percentage of social grant beneficiaries in SLM.

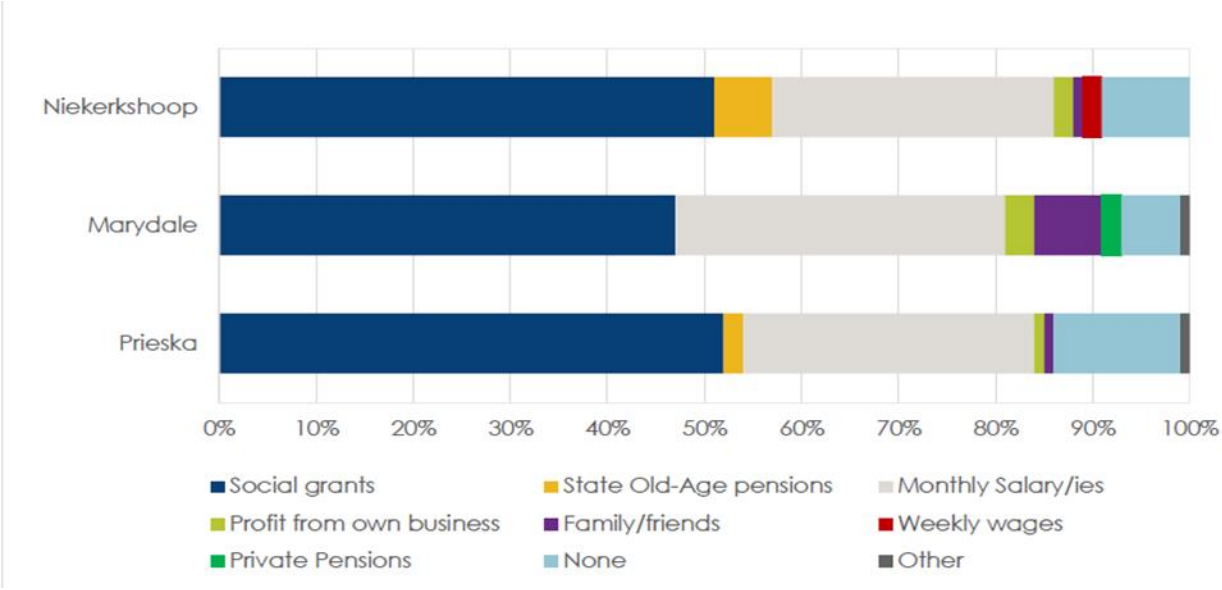

Figure 7: Main sources of income in SLM. Source: Knowledge Pele, 2022.

3.2.5 Poverty and crime

In addition to social grants dependency in SLM, poverty is one of the main challenges in the municipality. In 2011 an average of 53.8% of the population in SLM were living below the minimum living level (MLL) (SLM, 2022). About 65% of local households were considered poor in 2011 because they earned less than R3200 per month (Statistics South Africa, 2018). The municipality has experienced a slight increase in crime rates over the previous few years due to the lack of economic prospects. However, crime statistics in the municipality remain low compared to other parts of South Africa. According to the Household Survey of 2016 there were only 5.1% of households where at least one member of the household experienced crime in SLM (Statistics South Africa, 2018). On the other hand, drug and alcohol abuse is one of the biggest issues SLM faces, and it is especially common among young people (Knowledge Pele, 2022). The levels of substance abuse in the Northern Cape region and associated complications such as foetal alcohol syndrome prevalence rates are among the highest in the world (Walker, 2009).

3.2.6 Service delivery in Siyathemba Local Municipality

Sanitation, water and electricity services in SLM are provided by the local municipalities in Prieska, Niekerkshoop and Marydale. There are no services rendered to Copperton since Alkantpan (Amscor) is responsible for the delivery of water, sanitation and electricity services there (SLM, 2022). While SLM supplies bulk water to Copperton, there are no water services being delivered to farms around SLM (SLM, 2022). The number of households in SLM with access to clean water, electricity and sanitation services is high. According to Statistics South Africa (2018) 78.6% of local households had access to flush or chemical toilets, while 95% of had access to clean water, and more than 87% of households had access to electricity via the national grid. Unlike local households, most of the farms located in SLM source their electricity directly from Eskom (SLM, 2022). Regardless of the high levels of service delivery in SLM, some challenges persist. These include the lack of safe and reliable water supply services, followed by the high cost of electricity, inadequate roads infrastructure and inadequate housing (Statistics South Africa, 2018). Figure 8 depicts a typical informal settlement in one of the townships in Prieska.

Figure 8: Informal settlement in Prieska (Svea Josephy, 2022).

3.2.7 Key economic activities in Siyathemba Local Municipality

The main economic sectors of SLM are manufacturing, tourism, mining and agriculture (SLM, 2022). According to SLM (2022), the economy of SLM is not diverse and is primarily dependent on the agricultural industry, which is susceptible to exogenous variables like unfavorable climatic conditions and changes in commodity prices. The principal economic sectors and their primary operations in SLM are shown in Table 3.

Table 3: Key economic activities in Siyathemba Local Municipality. Source: SLM, 2022 and Knowledge Pele, 2022.

Economic sector	Description
Agriculture	Irrigation farming along the Orange River (cultivation of grains and vegetables); livestock. Farming (cattle, sheep and goat farming); game farming.
Mining	Alluvial diamond mining along the Orange River; various semi-precious stones, such as tiger's eye, and copper and zinc deposits; saltpans for the potential of salt production.
Manufacturing	Agri-processing is the main manufacturing activity (production of various plant and meat products); bakery; furniture; etc.

Tourism	The Prieska Museum; game hunting; Orange River; etc.

Figure 9: Grain farming in Prieska (Svea Josephy, 2022).

Despite the aforementioned economic drivers in SLM, renewable energy is emerging as a key investment opportunity that is earmarked to drive economic growth and boost the socio-economic development of the Upper Karoo region. Renewable energy projects such as wind farms and solar power plants are transforming the landscape in various Karoo regions including SLM (Walker, 2019). SLM has been identified as one of the pilot areas for the development of solar parks in South Africa. At present, five renewable energy projects have been constructed in SLM, while some companies have made applications to the local government for the construction of renewable energy projects (Interview 7). There is keen interest among IPPs to construct renewable energy projects on private land, most of which is owned by private farmers (SLM, 2022).

The South African government continues to emphasise the need for renewable energy projects to benefit local communities through job creation, internships, skills transfer and bursaries, and social and local economic development. SLM has been one of the beneficiaries of this renewable energy rollout; as a result, the municipality has received substantial chunks of climate finance investments in solar PV and wind farms. The development of renewable energy projects in SLM is having a positive impact on other sectors such as trade, retail and business, and property, in the wake of the in-migration of engineers and other professionals to SLM, as well as through the construction of renewable energy related infrastructure. However, even though renewable energy projects are being implemented in order to achieve a just transition pathway to decarbonising South Africa's energy sector, it remains unclear whether the climate finance mobilised in this way is reaching the people on the ground as per the premise of REIPPPP implementation policy.

As already mentioned, SLM consists of four towns. The following sections discuss in detail the profiles of each of these towns with a focus on their history of establishment, present state and some of the challenges they are facing.

3.3 A brief profile of the four towns located in Siyathemba Local Municipality

3.3.1 Prieska

Prieska was established in 1892. In the past, it was a place farmers migrated to when the rains filled up the pans in the area (Statistics South Africa, 2011). The town is known for its quality semi-precious stones and was a fording place used by early travellers (Atkinson, 2007). Originally it was named Prieschap, which is a Khoisan word meaning "place of the lost she-goat". Prieska covers a total area of 195.52km² (SLM, 2022). The town is located alongside the Doringberg hills on the southern bank of the Orange River (Atkinson, 2007).

Prieska was formerly a rural community with only a chapel and a sparse cluster of townhouses in the vicinity of the town centre. The museum, which is housed in the local government offices, features farming implements and tools that were used historically in Prieska. Even though the museum tells the history of the founding of Prieska, continuing renovations mean that the tools on exhibit are expected to be permanently transferred to the district municipality in De Aar (Interview 8). Prieska's population increased from 8447 in 2001 to 14 246 in 2011, representing an increase of roughly 69% over the preceding ten years (Atkinson and Kotze, 2017). The Coloured population

makes up the largest group followed by Black Africans. The most widely spoken language in Prieska is Afrikaans.

Prieska is a farming and mining hub with copper mines and abundant tiger's eye deposits (a type of semi-precious stone). The town is located along the crucial N10 renewable energy corridor, and it is connected to major cities like Upington and Kimberly by good, tarred roads as well as the main railway line into Namibia (Atkinson and Kotze, 2017). The town is known as "the gem of the Northern Cape" because of its fertile irrigated fields along the Orange River and its pleasant urban architecture (Atkinson, 2007). Alternative Energy Development has been selected by SLM as an Anchor Economic Activity in the municipality (Atkinson and Kotze, 2017). As a result, the municipality council and the Department of Energy signed a memorandum of understanding (MOU) for the development of the Prieska Solar Park on 5000ha of common land with an initial goal of supplying 1GW of solar energy to the Eskom grid. In addition to this MOU, a number of renewable energy projects in Prieska have been built on privately held land. It is crucial to note that all of these projects are situated in Copperton, which is about 65km from Prieska. Since Prieska is the only town in SLM with guesthouses, most migrant workers employed by the renewable energy companies stay there while they are in SLM, making it the only town that appears to gain from tourism.

The town is important because it is the seat of the local municipality. Compared to the other towns in SLM, Prieska is slightly more developed because it has infrastructure such as better roads (mostly tarred), clinics, hospitals and a public library. Unlike other towns Prieska has six schools, both primary and high school level. With the seat of the municipality being in Prieska residents have access to the municipal offices, home affairs, SASSA offices, retail shops, which are non-existent in the other three towns under the jurisdiction of SLM. But even though Prieska is more developed compared to the other three towns in terms of infrastructure and other amenities such as retail stores, ATMs and guesthouses, unemployment remains rife in the town. A study conducted by Knowledge Pele in 2022 found that about 81% of the people that were sampled in Prieska were unemployed. As in the rest of SLM, most residents are dependent on social grants as a primary source of income.

Prieska is a mix of formal and informal settlements. The town retains some legacies caused by the spatial planning of apartheid. A few kilometres from the main centre there are tin roofs of informal settlements (these are known as shacks in South Africa). The shacks blend into the layers of government housing known as RDP. The shacks and the government houses are located on the outskirts of the town. They border suburbs that were reserved for Coloured people during the apartheid era. These suburbs consist of older houses that have bigger yards and some of them have well-kept gardens. Just a few kilometres away from these suburbs there are wealthier properties as the main town of Prieska approaches. These are the houses that were reserved for white people during apartheid. The situation has not changed much in Prieska as many of these houses are still predominantly occupied by white people. However, as some white people are migrating out of Prieska, there are some elite Coloured and Black Africans residents who have moved into these affluent neighbourhoods located close to or in town.

Figure 10: Government housing on the outskirts of Prieska (Svea Josephy, 2022).

Figure 11: Town centre of Prieska (Svea Josephy, 2022).

3.3.2 Copperton

Copperton is an old mining town that was sold to a private owner after the closure of the mine (SLM, 2022). This small rural settlement is located about 70km away from Prieska. At present the town is held on a long-term lease by the Request Trust, which was awarded a license to mine copper and zinc (SLM, 2022). Operations to mine copper and zinc in Copperton were opened in the early 1970s by Anglovaal Mining Group and were shut down in the late 1980s (Atkinson and Kotze, 2017). After the closure of the mines and the sale of the town some of the houses that used to accommodate people working in the mine were demolished. However, after the lease agreement was signed with the Request Trust it was agreed that some of the houses could be retained (SLM, 2022). The few houses that were not demolished are used by Alkantpan (Amscor) to accommodate some of its workers and some residents who remained in Copperton. At present, the Request Trust is in negotiations with the municipality in regard to housing and development of land in the area. SLM has meanwhile provided some infrastructure for this purpose (SLM, 2022). The population of Copperton grew from 36 people in 2001 to 57 people in 2011 (Atkinson and Kotze, 2017).

SLM does not provide any services to Copperton. Alkantpan (Amscor) is responsible for the provision of water, sanitation and electricity services to Copperton, and is also responsible for the

maintenance of the roads (SLM, 2022). However, the municipality supplies bulk water to Copperton (SLM, 2022). During the 1970s while Anglovaal Mining Group was still operating in Copperton, Copperton Mine constructed a 52km water pipeline with dedicated water treatment works to supply water from Prieska to the mine (Atkinson and Kotze, 2017). After the mine was shut down the ownership of the pipeline was transferred to the military testing station Alkantpan (Armscor), which used the pipeline to supply water to their testing facilities close to Copperton (Atkinson and Kotze, 2017). Currently Amscor owns, operates and maintains the pipeline.

There are fewer than 40 houses remaining in Copperton; all are in a gated area with security at the entrance. There are no shops, schools or clinics in Copperton. Visitors must report to security when entering this gated settlement of about 50 people. Although Copperton has a few people residing in the town, there are vast open spaces that are not being used. Some of this land is leased to renewable energy companies. All five of the renewable energy projects that have been constructed in SLM to date are situated in Copperton.

Figure 12: Garob Wind Farm owned by Enel Green Power located close to Copperton Wind Farm (Svea Josephy, 2022).

3.3.3 Niekerkshoop

Niekerkshoop is a small town located in SLM. The town was established in 1902 on a farm in Modderfontein. It was named after the farm's owners, two brothers named Van Niekerk (Statistics South Africa, 2011). According to the 2011 Census, the town had a population of 1830 of which

16.1% had no schooling while only 10.2% had matric (Statistics South Africa, 2011). Water, electricity and sanitation services are provided by the local municipality. During the last census count of 2011, more than 88% of the population had access to electricity, 97.3% were connected to water, while 66.1% were using pit toilets with ventilation for sanitation and only 23% used flush toilets connected to sewerage systems (Statistics South Africa, 2011).

Niekerkshoop is rich in tiger's eye, hence the town is known as the biggest tiger's eye mining community in South Africa (Ledwaba, 2014). However, even though tiger's eye mining commenced in 1803, its socio-economic benefits have not been enjoyed by the community (Ledwaba, 2014). Most of the tiger's eye miners continue to live in extreme poverty with little or no formal education (Rasmenu et al, 2016). The reason for the lack of benefits from such mining activities is because tiger's eye mining is practiced on a small scale and is unregulated. Most miners working on communal land are unregulated and operate without a legal framework. They continue to use rudimentary tools (Ledwaba, 2014). The only mining operations with formal permits occurs on privately owned land (farms) and this is where miners are underpaid or exploited. For instance, Knowledge Pele (2022) reported that people working in tiger's eye mines are not paid but are given food hampers and provided with transportation in exchange for their labour.

As in Marydale, Niekerkshoop lacks infrastructure. There are no tarred roads in the community, which uses gravel roads that are poorly maintained. Niekerkshoop has one primary school; there are no hospitals, orphanage homes nor old age homes. The WiFi that is available at the library and school sometimes does not work, thus hindering members of the community who wish to use the internet for job applications and to access information. Like the other towns in SLM, Niekerkshoop has a high rate of unemployment. The majority of the population is dependent on social grants. However, during the harvesting season, the local population benefits from seasonal employment on neighbouring farms, usually from about June to August (Knowledge Pele, 2022). As a result of the lack of development and high unemployment in Niekerkshoop, many are moving out of the town. Many of the youth are moving to places like Cape Town, Johannesburg and Port Elizabeth in search of better opportunities (Knowledge Pele, 2022).

3.3.4 Marydale

Figure 13: Entrance to the small town of Marydale (Svea Josephy, 2022).

Marydale is a small town in SLM. The town was established by the Dutch Reformed Church in 1903. The land on which the town is built on was sold to the Dutch Reformed Church by the owner of Kalkput. To show generosity to the farmer who sold the portion of his farm land for the establishment of the town, it was named after his wife Mary Snyman (Statistics South Africa, 2011). Hence the town is known as Marydale. In 2011 Marydale had a population of 2623. The Coloured group make up 84% of the total population, while Black Africans make up 10.9%. The rest is made up of Whites, Indians/Asians (Statistics South Africa, 2011). More than 90% of the residents speak Afrikaans.

Like most small towns in the Upper Karoo region, Marydale is confronted by several developmental challenges. Although Marydale is considered as a small town by SLM, it does not have infrastructural development. The town has a clinic, community hall, library and one primary school. Once the children finish primary school they must travel to Prieska or Upington, which is more than 170km away to continue with their studies. The town has no retail stores or banks; it

has only one ATM to cater for a population of more than 2000. There is only one petrol station in Marydale, which operates during the week and closes on weekends. If members of the community wish to access amenities such as banks, local municipality offices and other important offices such as SASSA and Home Affairs, they must travel to Prieska. This is a challenge since taxis operating between Marydale and Prieska are scarce and expensive, meaning that residents have to resort to hitchhiking in order to get to Prieska.

Services such as water, electricity and sanitation are provided to Marydale by SLM. In 2011 more than 75% of the population had access to electricity, while more than 90% was connected to regional or local water schemes (Statistics South Africa, 2011). The lack of development in Marydale means that unemployment, poverty and social grant dependency is high as I have already mentioned in this chapter. In 2011 only 16.9% of the population had matric, while only 2% had some form of higher education (Statistics South Africa, 2011). As a consequence, to the lack of opportunities in Marydale, outward migration for better opportunities is high. Unemployment and high levels of poverty are push factors leading to the movement of people to places such as Cape Town, Johannesburg and other neighbouring towns such as Prieska and Upington in search of better livelihoods (Knowledge Pele, 2022).

3.4 Conclusion

This chapter has introduced the study area, which is Siyathemba Local Municipality. Understanding the geographic and socio-economic context of the study area is crucial for this investigation. The small towns of SLM continue to face a number of socio-economic obstacles despite receiving investments from climate funding in renewable energy, and there has been little infrastructure development in the municipality overall, particularly in places like Niekerkshoop and Marydale. Although renewable energy development is emerging as an important economic sector in SLM, agriculture remains a dominant and critical economic sector in the municipality.

Unemployment, poverty and low levels of education were identified as some of the critical challenges that need urgent attention in the local municipality. Despite the obstacles facing SLM, this chapter has revealed that there is a high potential for renewable energy development. It is therefore important to explore whether the few renewable energy projects that already exist in the municipality have contributed to the local municipality's socio-economic development as the

premise of South Africa's REPPPP. The next chapter details how the research for this study was conducted in order to explore whether climate finance investments in renewable energy development in SLM have managed to promote a just transition in the municipality.

CHAPTER FOUR: RESEARCH METHODOLOGY

4.1 Introduction

This chapter reviews the research process that was undertaken to conduct this study. The purpose of this research is not to provide statistical information; a qualitative research approach has been adopted to take a descriptive and explanatory path. The chapter begins by discussing the contours of the research method used to conduct this study. Next, the qualitative research method I adopted is explored in more detail to justify why it is necessary for this study. The next section briefly outlines the sources of data that were used, including how the research participants were selected. This is followed by a discussion about the data collection methods used. The process undertaken during data collection is explained in detail, including the justification for the selection of the research methods and techniques. Thereafter the approach used to analyse the data emerging from the data collection is discussed in detail. This is followed by an elaboration of the challenges I met while arranging interviews and during fieldwork. Lastly, I discuss the ethical considerations that were followed during the research process.

As already mentioned in Chapter One, this research was largely influenced by my interest in socio-economic development issues in vulnerable and marginalised communities who often lack economic opportunities. Also, my work as a research fellow at the African Centre for a Green Economy which is a small NPO based in Cape Town also played a significant role selecting this research topic. Being a researcher in the NPO space and having worked in research projects where I have come across climate finance debates and conversations where big financial figures allocated for climate related projects are often mentioned together with the policies outlining how a just transition can be achieved in South Africa might have influenced my positionality in this research. In many cases these conversations take place at a high level and often lack of evidence of the implementation on the ground. However, to avoid being bias and my preconceived notion of what is happening in climate finance and a just transition space in South Africa, I made sure that my

work is entirely informed by the data I collected from the field, interviews, document analysis and literature review. To make valid arguments in this research I analysed pertinent documents, conducted desktop research, conducted interviews, spent time in the field to observe the environment in SLM. This process was crucial in permitting me to make valid points drawn directly from the rich data I collected, thus assisting me to avoid being bias documenting and analysing the findings.

4.2 Qualitative research

Given their efficiency in addressing a novel issue about which little is known, I believed that qualitative research methods were suited for achieving the research aims of this study (Ma and Oluwabunmi, 2019). The qualitative approach proved fruitful because it allowed me to obtain detailed descriptions of the feelings, experiences and opinions of the research participants who were chosen for this project to examine in granular detail the efficiency of climate finance investments in renewable energy development in SLM to promote a just transition. This line of inquiry is urgent because, contrary to what national government policy on the growth of renewable energy has promised, little is known about the REIPPPP's capacity to foster an equitable transition at the local community level.

The qualitative research approach was deemed to be most relevant for answering questions such as, in what way has climate finance investment in renewable energy development in SLM managed to transform the livelihoods of the local population? Is climate finance in renewable energy development in SLM contributing to energy justice, social justice and climate justice? Obtaining answers to such questions was made possible through in-depth interviews with the selected research participants and close observation of the study area. This process was vital to achieve the aims of this research, which seeks to explore the effectiveness of climate finance in promoting a just transition at the local municipal level. According to Njie and Asimiran (2014, 35), a qualitative research approach is widely used in the field of social sciences "to make sense of, or interpret phenomena in terms of the meanings people bring to them".

In this study the qualitative research approach was adopted to investigate the "local knowledge and understanding of a given program, people's experiences, meanings and relationships, and social processes and contextual factors that marginalize a group of people" (Mohojan, 2018, 23).

For the case of this research, the qualitative research approach was adopted to obtain insight into the REIPPPP and its impact at the local community level and to gather the insights of key stakeholders so as to analyse and draw conclusions about the impact of the programme on socio-economic well-being in local communities in SLM.

The advantage of qualitative research is its capacity to investigate "why" rather than "how many" (Milena et al, 2008). This was deemed crucial for this study because my goal was to determine whether climate finance investments in the development of renewable energy in SLM have improved the quality of life in local communities in terms of socio-economic development and justice, rather than quantifying the number of socio-economic benefits or the number of people who have benefited from them. Conducting a qualitative study requires "the studied use and collection of a variety of empirical materials – case study, personal experience, introspection, life story, interview, artifacts, and cultural texts and productions, along with observational, historical, interactional, and visual texts – that describe routine and problematic moments and meanings in individuals' lives" (Denzen and Lincoln, 2018, 45). This study was developed through a combination of interviews, observations and document reviews (Astalin, 2013, 118). The qualitative research techniques used are central to providing answers to questions concerning the experience, significance and viewpoint from the standpoint of research participants (Crabtree, 2019). Drawing from Peshkin (1993), Njie and Asimiran (2014) outline the purpose of qualitative research, which is to describe, interpret, verify and evaluate. Citing Peshkin (1993), Njie and Asimiran (2014) further state that

> in the descriptive sense qualitative research reveals the nature of a situation, setting or process; in the interpretative sense it helps in gaining new insights, concepts and discover problems that exist in a given situation; in the verification setting it helps experiment certain assumptions and in the evaluative sense it helps provide the means of judging the effectiveness of particular practices, innovations and processes (Njie and Asimiran, 2014, 36).

Qualitative research methods have been productive in this study for comprehending social reality, learning about the socio-economic effects of climate finance investments at the local community level, and exploring the challenges and issues related to the distribution of climate finance

investments to local socio-economic development initiatives. The effectiveness of climate finance investments in promoting a just transition by supporting socio-economic development initiatives in local communities was examined. This approach was crucial for comparing the promise of socio-economic development through the mobilisation of climate finance to the reality of the situation on the ground in terms of the actual socio-economic development contributions. In this sense, selecting the qualitative research method was necessary for broadening and deepening my understanding of how things came to be the way they are in the renewable energy development sector in SLM (Hancock et al, 2007; Astalin, 2013).

The qualitative research approach method has faced robust criticism despite its importance in social science research, especially from those who favour quantitative research techniques. The results of qualitative research are sometimes criticised for not being generalisable to a larger population as they tend to employ small samples and do not randomly choose the research participants (Hancock et al, 2007). However, Hancock defends the qualitative method by arguing that "if the original research question sought insight into a specific subgroup of the population, not the general population, because the subgroup is 'special' or different from the general population and that specialness is the focus of the research, the small sample may have been appropriate" (Hancock et al, 2007, 7). Additionally, qualitative study is criticised for being unscientific, exploratory or subjective, and is often referred to as a creative narrative exercise (Ma and Oluwabunmi, 2019; Denzen and Lincoln, 2018).

Despite the criticisms made against this approach, a major benefit of qualitative research is its ability to collect and analyse individualised data on a deeper level through interviews, observations and document analysis (Mohajan, 2018). Denzen and Lincoln go on to discuss the value of qualitative research and how it may be used to conduct investigations and present findings. They contend that

> Qualitative research/inquiry is endlessly creative and interpretive. The researcher does not just leave the field with mountains of empirical materials and easily write up his or her findings. The writer creates narratives, braided compositions woven into and through field experiences. Qualitative interpretations are constructed. (Denzen and Lincoln, 2018, 64).

The qualitative research approach was adopted for the present study because it allowed me, as the researcher, to identify and isolate the target population and the study location, and to critically analyse the policy effects of the REIPPPP in the real-life context of SLM while also examining the impact of the climate finance investments on the selected municipality through in-depth interviews, document analysis and observation. In order to provide a descriptive and explanatory analysis of the novel phenomenon that is the socio-economic effects of climate finance investments in renewable energy development in SLM, qualitative research methods had to be adopted.

The impacts of climate finance investments in renewable energy on the local population in South Africa's vulnerable and marginalised communities located in the vicinity of renewable energy projects are not well understood. To examine the just transition discourse advanced by South Africa's NDP, it is essential to illustrate how climate finance investments have been received from the perspectives of all stakeholders in SLM, which is one of the many local municipalities that is confronted by significant socio-economic risks.

4.3 Qualitative research method: Case study approach

It is crucial to go into greater detail about the case study methodology used in this study. The case study technique was successful because it allowed me to analyse and critically examine the socio-economic development interventions supported by IPPs and policy developments of the REIPPPP in detailed real-life context of local communities in SLM (Crowe et al, 2011). The case study method is popular across many fields, but it is most frequently employed in the social sciences (Crowe et al, 2011). The case study approach is especially helpful, according to Crowe et al. (2011, 1), "where there is a need to get an in-depth appreciation of a topic, event, or phenomenon of interest, in its natural real-life context". When a researcher wants to invest time and effort in a scenario, location, programme, group or person with the purpose of answering "how" and "why" moral dilemmas, a case study approach is thought to be appropriate (Njie and Asimiran, 2014, 39).The rationale offered by Njie and Asimiran (2014) for favouring the use of the case study is what motivated me to adopt this approach to describe and explain the socio-economic impact of renewable energy development in SLM to determine whether climate finance investments in renewable energy development has managed to promote a just transition.

As a human geographer who is interested in how national development programmes impact the livelihoods of vulnerable and remote communities in South Africa, it was essential for me to interrogate whether the climate finance investments in South Africa's REIPPPP have actually translated into socio-economic benefits for local communities, and to assess the extent to which a just transition driven at the national government level has been achieved at the local level. Choosing the case study approach and a single area has enabled me to dig deeply to reveal data about the socio-economic contribution of climate finance investments in the REIPPPP in a single case study area, SLM. This allowed me to provide rigorous description and explanation of phenomena studied through the use of various data collection methods (Astalin, 2013). In this research the case study approach was instrumental in answering the research questions posed at the outset. The importance of a case study approach in qualitative research is explained in detail by Crowe et al (2011):

> The case study approach lends itself well to capturing information on more explanatory "how", "what" and "why" questions, such as "how is the intervention being implemented and received on the ground?" The case study approach can offer additional insights into what gaps exist in its delivery or why one implementation strategy might be chosen over another (Crowe et al, 2011, 4).

In this study I am interested in looking for answers to questions such as "what are the socio-economic impacts of climate finance investments in REIPPPP for local communities in SLM"? "How have climate finance investments in renewable energy projects in SLM contributed to achieving a just transition at the local community level"? "Why has climate finance investment not managed to promote a just transition in local communities in SLM"? Seeking answers to some of these questions is what led me to adopt the case study approach in this research because it allowed me to disentangle the phenomena being studied in a specific area where there is evidence of climate finance flows to renewable energy.

Case studies can be categorised as intrinsic, instrumental or collective (Crowe et al, 2011). The purpose of intrinsic case studies is to learn about a particular phenomenon. Instrumental case studies employ a specific case to comprehend and appreciate a topic more fully. Collective case studies look at a number of situations in an effort to understand a topic more thoroughly (Crowe

et al, 2011, 2). Both the intrinsic and the instrumental approaches were used in this study. I undertook an intrinsic case study approach to explore the socio-economic impact of climate finance investments in renewable energy development in a specific area. The purpose of adopting this approach was to understand and explain how it is living its case of interest (Njie and Asimiran, 2014). The research developed into an instrumental case study through seeking to understand the issue of socio-economic impact of climate finance investment in local communities in SLM through understanding the role, interactions and engagements of various stakeholders involved in socio-economic and renewable energy development in SLM. This allowed me to offer insights and draw conclusions about whether climate finance investments have managed to promote a just transition at the local municipal level.

The case study technique in qualitative research is used to describe an entity that forms a single unit such as a person, community, organisation or institution, although some case studies describe a series of cases (Astalin, 2013, 122). In this research the case study approach was used to understand whether climate finance investments in the REIPPP programme have contributed to a just transition in SLM through socio-economic contributions to local communities. When selecting a case study, it is important for a researcher to select an area where a practical problem that she/ he is interested in exists (Starman, 2013). The selection of SLM as a case study for this research was informed by research that I participated in previously as an employee of a research company, when I was made aware of the challenges of high unemployment, poverty and a high dependency of social grants for survival. Since the REIPPPP was launched in 2011, the municipality has seen five renewable energy projects constructed in the area. It was therefore important to understand whether the development of these renewable energy projects has made any contribution to addressing the socio-economic challenges. In South Africa IPP companies owning renewable energy projects are required to contribute to socio-economic development in local communities where they operate.

Despite being essential to social science research, the case study approach has come under some scrutiny. Astalin (2013), for example, quotes Bent Flyvbjerg (2006) in reference to what he terms “misunderstandings” concerning case study research. A summary of some of the objections to the case study approach is given by Flyvbjerg. He states that the case study approach is criticised for missing theoretical knowledge and having a bias towards verification through a tendency to

corroborate the researcher's preconceived notions. The detractors of case study research contend that one cannot generalise based on a single case (Flyvberg, 2006 in Astalin, 2013). Notwithstanding such critique, Hancock et al (2007,11) caution that some of the objections to case study research reflect a misunderstanding about the purpose of the case study, which is to provide a detailed description and explanation about a particular case. In this research I accordingly set out to provide a detailed account of whether climate finance investments in REIPPPP have been effective in promoting a just transition in SLM as per the premise of South Africa's just transition discourse.

4.4 Research and selection of research participants

The primary research data for this study were collected from in-depth interviews and observation of the study area, which is SLM. The secondary data are drawn from existing literature by means of a search and selection strategy. Sources of secondary data included official government policy documents, peer reviewed articles, annual company reports/documents available in the public domain (for instance in media and company websites) and quarterly reports published by the IPP Office about South Africa's REIPPPP. To collate data, an extensive literature review, observation and in-depth interviews were conducted.

Purposeful sampling was used to select research participants. Purposeful sampling is a non-random sampling technique that makes use of specific criteria or purpose to select a specific sample (Patton, 2002 in Gentles et al, 2015). This technique is most often utilised in qualitative research to identify and select information-rich cases for the most effective use of limited resources (Patton, 2002 in Gentles et al, 2015). The purposeful sampling method requires access to key informants in the field who can help to identify information-rich cases (Surl, 2011). This meant that the research participants were recruited based on the assumption that they possess knowledge about the phenomenon of interest, therefore they were in a position to provide information that is both detailed and generalisable (Palinkas et al, 2015).

In qualitative research the sample size is typically small and dependent on the nature of the data, the availability of participants, and where that data takes the investigator (Hammarberg et al, 2016). This is the reason the purposeful sampling technique was used: to ensure that the selected research participants are able to add value and knowledge to this study. The research participants

were selected on the basis of their roles in the socio-economic development of SLM or in renewable energy companies based in SLM. The research participants targeted were SLM officials, SED managers and sustainability team members of IPP companies, members of community organisations and individual members of communities in SLM.

4.5 Methods of data collection

In qualitative research there are various data collection methods that are used to collect data. These include observation, textual or visual analysis (books, photos and videos) and interviews (individual or group) (Gill et al, 2008). Data collection and research methods are inextricably interdependent. In this section the data collection methods that were used for collecting primary and secondary data for the study are discussed extensively. The data collection methods used in this study include extensive literature review, in-depth interviews and observation.

4.5.1 Extensive literature review

An extensive literature review was conducted to gain an understanding of existing research, knowledge gaps and debates around climate finance and a just transition. This method of research enabled me to make a significant theoretical and practical contribution to existing knowledge in climate finance and its role in promoting a just transition at the local government level. This research method was found salient for synthesising research findings to reveal evidence on a meta-level and uncover areas where more research is needed (Snyder, 2019). Desktop research was primarily used for the literature review since most of the peer reviewed articles, journals, grey literature and books, company documents and policies can be accessed online.

To undertake the desktop research relevant existing publications were identified through search and selection processes using key words such as “climate finance”, “private climate finance”, “financing climate change and local economy development”, “just transition”, “just energy transition” and so on. This form of data search was helpful in identifying relevant data sources. Data sources that were considered included the University of Pretoria Library Services and search engines such as Google Scholar, ScienceDirect and so on. The focus of the literature review was to locate this study within existing literature that has interrogated the impact of climate finance investments in socio-economic development at a local government level.

In addition to contributing to theoretical frameworks, the literature search was used to identify company reports, government policies and other documents addressing South Africa's renewable energy initiatives. For example, primary documents such as those published by the IPP Office, which provides reporting on the socio-economic contributions of the REIPPPP, proved vital during the data collection for this study. This data collection method was crucial in helping me to seek and explore existing answers to questions such as "what are the perceived challenges and problems associated with distributing climate finance to local socio-economic development initiatives"?

4.5.2 In-depth interviews

The in-depth interview technique was used to collect some of the data for this study. The goal of the in-depth interview is to paint a clear picture of the participant's viewpoint on the research topic (Milena et al, 2008, 1279). The interviewing process is regarded as one of the most appropriate data collection methods in the field of social science. This is primarily because this method of data collection aims to explore and understand people's opinions, beliefs, motivations and personal experiences on selected issues while also offering a deep comprehension and knowledge of social phenomena, which is difficult to achieve from quantitative methods like questionnaires (Gill et al, 2008).

Using in-depth interviews to explore people's opinions and personal experiences was critical in this research. Through this process I was able to acquire information related to the issues I have read about in the media regarding conflicts between local communities and IPP companies associated with development projects such as mining and renewable energy projects in SLM. For example, the media reported about the stand-off between Orion Minerals, renewable energy companies and the local business forum (see Appendix 2). During comprehensive interviews with the local business forum and renewable energy companies operating in SLM I was able to come to a deeper understanding about what led to the deadlock between these stakeholders. Therefore, conducting interviews allowed me to gain insights about the topic of interest through the perspectives of the selected research participants. The interviews with the various stakeholders provided rich and detailed information about the situation on the ground in SLM. This information would not have been retrieved had the interviews not been conducted.

Structured, semi-structured and unstructured interviews are some of the many forms of interviews used in qualitative research. In structured interviews, a set of predetermined questions is followed through the interview process, and there are no follow-up questions to the answers obtained during the interview. Structured interviews are composed of verbally presented questionnaires. Semi-structured interviews have prepared core questions that assist to outline the areas to be examined and also permit the interviewer to ask the interviewee for greater clarification on their responses (Gill et al, 2008). Unstructured interviews lack a predetermined format for inquiry. According to Ryan et al (2009), the unstructured interview strategy makes the assumption that the researcher knows little about the issue of interest, making it impossible to generate planned questions to pose to the interviewee. Semi-structured interviews were chosen as the most suitable type for this study since they would enable me to gather enough information for my research. Citing Brinkmann's (2018) statements, which illustrate why semi-structured interviews can be thought of as the most acceptable type of interviews when compared to structured and unstructured forms of interviews, provides the basis for using semi-structured interviews for this study.

> Compared to more structured interviews, semi-structured interviews can make better use of the knowledge-producing potentials of dialogues by allowing much more leeway for following up on whatever angles are deemed important by the interviewee, and the interviewer has a greater chance of becoming visible as a knowledge-producing participant in the process itself, rather than hiding behind a pre-set interview guide. And compared to more unstructured interviews, the interviewer has a greater say in focusing the conversation on issues that he or she deems important in relation to the research project (Brinkmann, 2018, 990-991).

The use of the semi- structured and informal interviewing in this study allowed for flexibility and responsiveness to emerging themes for both the interviewer (myself) and respondent (research participants) (Jackson et al, 2007). For example, unstructured interviews conducted with the participants in this research enabled me to ask follow-up questions about the issues they raised during the interviews so as to understand at a deeper level the situation on the ground. To facilitate an effective interviewing process, the researcher (interviewer) is viewed as the student while the person being interviewed is considered to be an expert (Milena et al, 2008). This approach proved effective for me to collect the information I needed for this study, as it allowed me to pose

questions and allow the research participants to voice their opinions and experiences without disturbing them. However, in cases where responses were vague I was able to ask follow up questions and request elaboration from research participants.

The success of in-depth interviews depends on the researcher's ability to ask relevant questions during the interview. Relevant questions are those likely to yield as much information about the area of interest as possible and that are able to address the aims and objectives of the research (Gill et al, 2008). A relationship of understanding between the interviewer and the interviewee must be established in order for the semi-structured interviews to produce the essential data for the research. In this case, I made sure that I was able to develop a shared understanding and relationship with the selected research participants. For example, after securing interviews, I kept in touch with the research participants on a regular basis through emails and phone calls in order to build trust and understanding. The relationship between myself and the research participants was based on trust, which was typically achieved through regular conversations, each of which took on a different format depending on the circumstances. This encouraged research participants to be confident, calm and open, and they felt inspired to communicate their most profound ideas regarding the impact of climate finance investments in renewable energy development in SLM and its socio-economic development impacts (Milena et al, 2008). All of the interviews that were performed for this study, including those with IPP companies, local government representatives, local community organisations and members of the community, used the semi-structured interviewing method.

4.5.3 Observation

Observation in this research allowed me to have a visual understanding of the study area. For example, through observation I was able to see where the renewable energy projects are located, and I noticed material and physical objects such as the television sets, washing machines, school buses, and the hydroponic technology project, all of which were funded by the IPP companies as part of their socio-economic contributions to local communities. Through the information gathered from observation of the environment in SLM, I was able to probe further about some of the aspects I had observed. In this context, observation played an important role and it was critical for adding to the richness of the comprehensive and complex story of the impact of climate finance investments in advancing a just transition at the local municipality level through socio-economic

development. During my observation of the study area I was able to document in photographs what I had seen in the field.

Observation is one of the critical data collection methods used in qualitative research. Although this technique is regularly employed in ethnographic methodologies, it can also be applied in other research designs, such as the case study approach used in the present study. This method is employed when other methods of data collection are ineffective or difficult to utilise, or when the data cannot be obtained through other methods (Hancock et al, 2007). However, in this study observation was utilised in order to add to other data collection methods such as in-depth interviews and literature review.

To fully experience the setting as thoroughly as suitable and optimal while simultaneously maintaining an analytical perspective rooted in the aim of the fieldwork, the researcher must be as involved as possible when conducting observation (Ciesielska et al, 2018). Although not always necessary for doing social science research, most researchers employ observation as a technique for analysing the research environment. In this study I found the observation technique necessary since it was important for me to validate the responses provided by the research participants where they mentioned physical socio-economic development initiatives, for example, the hydroponic project discussed in Chapter Seven of this research.

Observation in qualitative research can take a participatory or a non-participatory approach. In a non-participatory approach for instance, the researcher attempts to understand the world, relationships and interactions in a new way, without prevalent categorisations and evaluations (Ciesielska et al, 2018). However, in this research it is important to note that observation was not adopted in order to understand the interactions between the key stakeholders involved in climate finance investments in renewable energy development and its impact on socio-economic development of local communities. My primary interest in adopting observation techniques was to add valuable personal insights about the physical environment of SLM where my fieldwork was undertaken. In this research observation was extremely helpful in allowing me to add my own experiences and thoughts about the physical environment of SLM and the physical material objects and initiatives funded by IPP companies.

4.6 Conducting the research study

The research for this study was conducted over a period of five months. The primary research was collected through face-to-face interviews, online methods such online video calls, telephonic interviews, questionnaires sent via emails and observation. The official data collection for the study began in January 2022, after the ethical clearance was granted by the University of Pretoria in November 2021. However, between January and February 2022 I spent most of the time arranging interviews with the research participants. Subsequent to being granted ethical clearance by the university I started making calls to arrange interviews with the research participants. The research participants that were selected for this research included IPP company representatives, SLM officials, the IPP Office, local community organisations and selected individuals from the local communities of SLM. This process was critical in making the research effective, by documenting the importance of the research purpose, how it was conducted, procedural decisions undertaken and provision of detailed data generation and management (Crabtree, 2019).

In total 17 people were interviewed for this study. The research participant interviewed included five IPP company representatives based in the Northern Cape province, Gauteng and the Western Cape. Three SLM officials were interviewed, including four representatives of local community organisations, while some members of communities were randomly approached during the fieldwork visit to SLM. The breakdown of the research participants is presented in Table 4. Primary data sources consisted of in-depth interviews, informal conversations with local community members and visitors from nearby towns, and observations conducted over a period of one week.

Table 4: Research participants for the study.

Affiliation	Gender	Location	Type of correspondence	Interview Number	Date

Mulilo Solar	Female	SLM	In the field and video/Zoom call	Interview No: 1	03 May 2022 10 May 2022
Mulilo Solar	Male	Cape Town	Video/Zoom call	Interview No: 2	03 May 2022
Enel Green Power	Female	Gauteng	Video/Zoom call	Interview No: 3	18 May 2022
Enel Green Power	Male	Gauteng	Video/Zoom call	Interview No: 4	18 May 2022
Sonnedix	Female	SLM	Emails, telephonically	Interview No: 5	18 May 2022
IPP Office	Unknown	Gauteng	Emails	Interview No: 6	20 April 2022 05 August 2022
SLM	Male	SLM	In the field	Interview No: 7	10 May 2022

SLM	Male	SLM	In the field and telephonically	Interview No: 8	28 February 2022 04 April 2022 10 May 2022
SLM	Male	SLM	Emails and telephonically	Interview No: 9	26 April 2022
Local business forum	Male	SLM	In the field	Interview No: 10	11 May 2022
Community forum	Female	SLM	In the field	Interview No: 11	11 May 2022
Elderly home	Female	SLM	In the field	Interview No: 12	10 May 2022
Community centre	Female	SLM	In the field	Interview No: 13	10 May 2022
Local community	Female	SLM	In the field	Interview No: 14	09 May 2022

Local community	Female	SLM	In the field	Interview No: 15	11 May 2022
Outside worker: Employed by Enel Green Power	Male	SLM	In the field	Interview No: 16	11 May 2022
Zenit Profin Groep	Male	SLM	In the field	Interview No: 17	10 May 2022

Data collection began with telephone conversations with one of the officials working for SLM. These conversations occurred before I had acquired ethical clearance from the University of Pretoria. This was important for gaining the trust of the municipality and their support and willingness to participate in my research. Orb et al (2001) term this strategy as a "step to a right direction" in conducting research. It is important to note here that these conversations were not part of the official data record as they began while I was seeking a letter of permission from the local municipality to approve my research in SLM. The clearance letter was required by the Faculty of Humanities Research Ethics Committee as part of the documents needed to apply for ethical clearance from the university. It is important to mention these conversations with the officials of SLM because they led to the scheduling of interviews with the relevant research participants in SLM and outside the municipality.

After these conversations the research participants were identified and the interviews scheduled with the IPP companies operating in SLM. Initially four IPP companies were identified for the interviews as these four had operational renewable energy projects in SLM. However, I was able to interview representatives from only three of these companies operating in SLM for reasons that will be explained in detail in the following section, which outlines the obstacles I experienced

while planning and setting up interviews and working in the field. The interviews with the IPP company representatives were conducted using online methods. As a result of time limitations and the locations of research participants, coupled with Covid-19 protocols, it proved difficult to set up face-to-face interviews with some IPP company representatives.

In some cases, the company representatives I was interviewing were not based in the same province, even though they worked together. In one instance I organised to interview two company representatives from one of the IPPs operating in SLM; one person was based in Cape Town while the other was in SLM. This meant it was more convenient to conduct the interviews online since both had access to the internet and were familiar with online meeting platforms such as Zoom, Google Meet and Teams. Although most of the interviews with the IPP company representatives were conducted online, I was able to conduct one face-to-face interview with an IPP representative based in SLM. During this period the company representative took me to observe some of the socio-economic initiatives that the company is supporting in local communities in Prieska.

Interviews with IPP company representatives were conducted using the semi-structured method. As already explained, semi-structured interviews enabled me to ask follow up questions where necessary to seek elaboration on responses provided by interviewees. Using the semi-structured method to interview IPP companies' representatives has proved to significant for the outcomes of this study. For example, during interviews with IPP company representatives I was made aware of documents such as proposals and environmental impact assessments that companies had submitted as part of their preferred bidder applications in terms of the REIPPPP. Some IPP representatives shared company documents that were not publicly available at the time the interviews were conducted (Adams, 2015). All the interviews with IPP companies were conducted in May 2022.

After completing my interviews with IPP company representatives, I arranged to conduct fieldwork in SLM. This was the most salient and critical part of my research agenda. The fieldwork afforded me an opportunity to have an "on the ground" experience, while enabling me to gain firsthand insights into the socio-economic contributions of climate finance investments in local communities in SLM. During the time I spent in SLM, I was able to visit the local municipal offices and conduct interviews with officials selected as participants for this research. The research primarily targeted the Local Economic Development (LED) division officials working in SLM.

One interview was conducted with an SLM officials who was not working for the LED division. This municipal official was selected because of his length of service at SLM. His understanding about the history of the municipality and how the landscape of the municipality had been reshaped by renewable energy investments in SLM made a significant contribution to the study.

In addition to local government officials, interviews were conducted with community organisations and randomly selected members of the local communities of SLM. Interviews with the local government officials were conducted at SLM offices where the selected participants worked. Apart from one interview with two community organisations representing local SMEs and communities in SLM, all other interviews with community organisations were conducted at the premises of the organisations selected for this study. In the case of the SME and community organisations, the interview was conducted at the local government chambers within the municipal offices, in the space where the local government council sits during its meetings. Notably though, representatives of these organisations were critical of local government officials even though the interview took place at the local government chambers. This proved an extremely interesting interview. It provided insight into the local context while confirming some of the struggles persisting within local government that had been raised during interviews with officials. Interviews with randomly selected community members were conducted in places such as coffee shops, public streets and at the guesthouse where I stayed during my fieldwork.

The length of time devoted to each interview varied. The online interviews with IPP company representatives took 45 minutes each. Interviews with the local government officials varied in terms of time spent. For instance, the interview with one of the LED division officials took more than an hour, while interviews with the other government officials took less than 20 minutes each. Interviews with community-based organisations took between 20 and 45 minutes while those with randomly selected people were short with the longest lasting only about 10 minutes. This was because these interviews were not planned and the individuals I approached informally were not always prepared to spend time answering the research questions. Even though they were short, these interviews proved productive as the community members appeared to have more understanding about the changes underway in SLM, such as the changing demographics of the population (particularly racial demographics).

All the interviews for this research were conducted in English. This is even though most of the research participants were Afrikaans speakers. However, there were cases where some of the research participants opted to use Afrikaans. This was apparent during the fieldwork in SLM where I was interviewing local community members. However, I was fortunate to be accompanied by my supervisor and a photographer who spoke Afrikaans during the fieldwork. This meant that translations occurred in some instances when necessary. However, I must note that language was not a barrier during the interviews with local community organisations, IPP representatives and the SLM municipal officials, as all the research participants understood and were able to speak English.

In this study the data sources such as in-depth interviews, observations and document analysis were chosen because I was interested in the situated knowledge of the selected research participants. Although the sample size for this study is small, the population sample is sufficient to provide generalisable data. However, in this study the sample size is not a constraint since the research approach that I have adopted is not concerned with making generalisations to the larger population of interests, but to make generalisations based on the assumptions of the selected research participants who are in a position to provide information that is both detailed and generalisable (Palinkas et al, 2015). While in the process of conducting this study critical reflection was employed to manage my own bias and order to contribute to meaningful interpretation of the findings from the data collection (Crabtree, 2019).

4.7 Data analysis

The data emerging from the interviews and observation was thematically organised for an in-depth qualitative analysis. To ensure the credibility and validity of the research I made sure that the data that was analysed for this research was generated from the data itself. All the emergent themes were generated from the fieldwork and interviews. However, I also incorporated theoretical ideas in my analysis, as discussed extensively in Chapter Two. All the data collected from the fieldwork and desktop research were organised and interpreted appropriately to extract key findings. Thematic analysis was the method adopted to analyse the data. This analytical approach is crucial for assisting the researcher to analyse a large range of data sets to find patterns and develop themes based on the data collected to identify important pieces of information (Jnanathapaswi, 2021).

According to Majundar (2019), there are two types of thematic analysis. These are the inductive and deductive approaches. Majundar provides a detailed explanation of both types:

> An inductive approach is where the themes identified from data are strongly linked to the collected data set (Patton, 1990). In this sense, an inductive method can be claimed to be data driven. Inductive technique is, therefore, the type of thematic method where the coding process of research data, after its collection via interview or focused group discussion does not try to fit any pre-existing frame or conception of the researcher. Whereas, on the other hand, deductive technique is that type of thematic method where analysis tends to be analyst driven. As deductive technique tends to be more driven by the researcher's theoretical framework and research interest, hence this technique provides a less rich organisation and description of the overall data, yet it can provide a more detailed analysis of some specific aspect of the data (Majundar, 2019, 200).

Both these approaches were adopted for a comprehensive thematic analysis of the data gathered for this study. The results and analysis of the findings were formulated based on the data collected from the interviews and observation. However, to make sense of the research and situate the study within the field of social science literature, theoretical frameworks emerging from the literature review were incorporated in my analysis.

In contrast to other qualitative research methods, thematic analysis is flexible, adaptable and helps to provide rich, thorough and complicated accounts of data sets (Majundar, 2019, 198). In this qualitative study, thematic analysis was used to classify patterns of meanings throughout a data set, which provided responses to the questions that guided the design of the study (Jnanathapaswi, 2021). This approach to data analysis follows specific instructions, which gives it a strong scientific foundation (Majundar, 2019). When applying thematic analysis to analyse qualitative data, Jnanathapaswi (2019) outlines a process that the researcher should follow that is broken into six parts. These phases are described in Figure 14.

Phases	Description of the analysis process
Familiarising data	- Transcribing data - Rereading the data and noting down initial ideas
Generating codes	- Coding interesting features of the data systematically - Collating data relevant for each code
Searching themes	- Collating codes into potential themes - Gathering all the data that is relevant to each potential theme
Reviewing themes	- Checking if themes work in relation to the coded extracts - Checking if themes work in relation to the entire data set - Reviewing data search for additional themes - Generating a thematic map of the analysis
Defining and naming themes	- On-going analysis to refine the specifics of each theme and overall story of the analysis - Generating clear definitions and names of each theme
Producing the report	- Selection of clear, compelling extract examples - Final analysis of selected the extracts - Relating the analysis back to the research question, objectives previous literature reviewed

Figure 14: Six steps in thematic analysis. Source: Jnanathapaswi, 2019 adapted from Bran and Clark, 2006.

Through these iterative phases of analysis, the researcher engages in a range of cognitive and creative activities, from clustering and comparing to conceptual cohering & hypothesising (Jnanathapaswi, 2019, 3). These stages of thematic analysis were crucial in helping me organize, identify, elicit meaning from the data, and produce the results and conclusions from my overall research and the primary data obtained from the fieldwork.

4.8 Research journey and challenges encountered

My intention in this section is to document my own research journey and to discuss the challenges I encountered in arranging interviews, conducting interviews, recording interviews and transcribing data collected during fieldwork in the era of the Covid-19 pandemic. This is critical for showing other researchers how they might think of approaching and planning fieldwork in order for data collection to be successful while ensuring the safety of both the researcher and the research participants.

In this section I outline the research journey and the challenges and setbacks that were encountered during fieldwork and while arranging interviews. During the data collection process the researcher may encounter unforeseen obstacles due to various factors (Kwadamah and Brobbery, 2016). The Covid-19 pandemic era has made this more apparent. We have seen severe interruptions in our daily lives ever since the Covid-19 virus first appeared in South Africa at the beginning of 2020. It has changed how people work and where they work from. The workplace has been completely transformed by the pandemic. Many workers have been confined to working from home. Many offices were closed, while some continue to operate with minimal essential staff. Although some workers are starting to return to the workplace, some organisations have decided to let some of their workers continue to work from home to overcome the problem of limited office space and the need to practice protection measures such as social distancing. These changes have had a negative impact on how researchers conduct the fieldwork, and was the framing for how I experienced the fieldwork and research for my study.

Conducting fieldwork during Covid-19 can be a threat to both researcher and research participants. The virus can be transmitted despite both parties taking strict precautionary measures. In order to minimise the dangers associated with Covid-19 during data collection Lupton (2020) suggests the use of digital technologies to avoid face-to-face interactions. However, resorting to the use of online methods or digital technologies is not effective when one is conducting research that involves participants who may be elderly or are from poor and marginalised communities. Using only online methods for collecting data for research further exacerbates marginalisation and exclusion of some groups such as the elderly and poor communities who do not have access to new digital technologies such as computers, cellphones or even data to log in online.

My research was dealing with human participants. As I mentioned in the previous sections of this chapter the research participants who were interviewed included local government officials, employees of the IPPs, members of local community-based organisations and local community members. Although the majority of the research participants interviewed had access to digital technology and the internet, I felt that it would be insufficient to only be dependent on online methods of data collection. This would mean that some members of local organisations that did not have a presence online or access to the internet would be excluded.

Setting up interviews is a critical element of the data gathering process (Kwadamah and Brobbey, 2016). Setting up interviews for this study proved to be challenging. This was principally because my study area is in the Northern Cape province and I am based in Cape Town in the Western Cape. Thus I needed to arrange the interviews via emails and phone calls. This proved to be a difficult process since I depended on telephone numbers and email addresses found on the websites of the IPPs based in SLM. I had to make several phone calls and send many emails to each company. In most cases I did not receive any response. However, I had to keep trying to contact the companies that I wanted to interview. Eventually three of the four renewable companies with operational renewable energy projects in SLM responded to my emails.

The companies I was able to set up interviews with included, Mulilo Solar, Sonnedix and Enel Green Power South Africa. It is important to note here that none of these companies have offices in SLM. However, Mulilo Solar and Sonnedix have staff on the ground who are working in SLM as Socio-Economic Development (SED) managers under the sustainability department of both companies. Although these managers do not necessarily have offices in SLM they are involved in community development projects that Mulilo Solar and Sonnedix are supporting in SLM, especially social development projects located in Prieska.

Securing an interview with a suitable representative from Copperton Wind Farm, a company with an operational wind farm in SLM, was a difficult task. Copperton Wind Farm has a website featuring contact details of its Community Liaison Desk. However, the telephone number did not go through and the several emails that were sent to the company were not answered. More than six emails were sent to the company and several calls were made but all these attempts were in vain. The company has a functioning and active Facebook page, which updates the communities of SLM about new developments and opportunities available. However, after sending several messages to the administrator of the Facebook page I did not receive any response (https://www.facebook.com/coppertonwind). As a result of the challenges mentioned above I was not able to interview any representatives of Copperton Wind Farm.

I must note that setting up interviews with local government officials was a seamless process. All the municipal officials I interviewed were professional in their manner. They were keen to answer my questions and filled me in on some of the issues from their point of view in relation to

renewable energy interventions in SLM, moreover providing information about aspects that were not included in my research questions. The productive response I enjoyed from the local municipality can be attributed to the relationships I had established with SLM officials during the course of my research, starting from when I needed to submit a consent letter from the local municipality permitting me to conduct my research.

Before my proposal could be approved by the Ethics Committee of the Humanities Faculty at the University of Pretoria I had to submit a consent form from SLM permitting me conduct my research in the municipality. This therefore required me to make calls to the municipality and explain my research and its intended benefits for the local municipality and the local communities. The LED division of Siyathemba Local Municipality showed much interest in my proposed research, and this allowed me to build a relationship with team members within the LED department. This relationship proved useful when I was arranging the interviews with the local municipal officials. This was because I kept contact with SLM officials after obtaining my letter of permission from the municipality, updating them as my research progressed and letting them know when I planned to travel to SLM.

Although setting up interviews with municipal officials had no difficulties, I must admit there were some minor problems that I encountered. For instance, during the week that I was supposed to be travelling to SLM the head of the LED department had to travel to Cape Town to attend the Mining Indaba. This meant that I had to interview a junior staff member who had less than six years of experience. Nevertheless, the interview was successful and I was able to send follow up questions to the head of the LED department to fill in certain gaps that emerged after face-to-face encounter.

Setting up interviews with community organisation was also tricky. The challenges arose because I did not know any of the organisations active in SLM. I did come across some local organisations aiming to promote socio-economic development in SLM on social media and online news. However, some did not have an online presence making it onerous to find their contact details to arrange interviews. To mitigate the lack of contact information, I ended up asking the people that I interviewed to introduce me to some of the organisations they are supporting as part of their socio-economic development contributions in SLM. This was effective and I was able to visit some of community organisations with the help of IPP company representatives working in SLM.

Conducting interviews with local organisations was simple as I was accompanied by representatives of the renewable energy companies that already had relationships with the organisations. However, visiting community organisations with representatives from the renewable companies may have had a negative impact on my data collection. For instance, members of the local organisations might not have been able to freely express their opinions regarding the support they received from those same renewable energy companies. This was a risk I was willing to take for my data collection to be successful, since I did not know how to navigate the communities on my own. The other barrier was language. More than 80% of the population of SLM speak Afrikaans, a language that I neither understand nor speak. It was therefore important for me to have a local person who speaks and understands Afrikaans during the visits to the local organisations. In this case I was fortunate because during fieldwork in SLM I was accompanied by my supervisor and a photographer who both spoke and understood Afrikaans.

One of the challenges I faced during fieldwork was related to my research status. Aiyub et al (2020) critically discuss status as one of the key obstacles that researchers face during data collection. They argue that respondents in the field regularly ask about the research status (i.e. professional or undergraduate research) of the project in question and tend to pay less attention to undergraduate research. I encountered this when I was interviewing one of the local community organisations (the business forum). The leader of the business forum wanted an assurance that my research would bring attention to the challenges local SMEs face when it comes to doing business with the renewable energy companies located in SLM. Although the local business forum was reluctant to participate in my research, I was able to convince them about the direct and indirect benefits my research would bring to the community at large including the business forum (Aiyub et al, 2020). While agreeing to be interviewed for my research the business forum leader was reluctant to be recorded, meaning I had to record the interview in writing. This was demanding as I had to ask questions and listen to the responses while simultaneously writing the responses down.

Although I encountered some obstructions while setting up interviews for this study, I must admit that conducting and recording the interviews and transcribing the data was not problematic. All the research participants that I contacted to participate in my research showed interest and willingness to participate apart from Copperton Wind Farm, which I was unable to reach. The research participants were willing to be recorded, except for the reluctance I encountered with the

local business forum. Transcribing the data was seamless since all the data were in English, thus making it easier for me to transcribe.

Aiyub et al (2020) emphasise the importance of a researcher being able to design a well-structured plan to anticipate every challenge that is likely to be faced in the field so as to produce valid and accurate data. It is therefore critical that a researcher be prepared for every scenario and outcome of the data collection process. To manage the challenges, I might encounter during my fieldwork and ensure that my data collection process was successful I made preparations in advance. Funding for all the needs of the fieldwork was made available by my research funders, and technical support was provided. For instance, I was accompanied by people who are fluent in Afrikaans who could assist me if there was a language barrier. I also had a photographer to create a visual record of my fieldwork.

4.9 Ethical considerations

Application of appropriate ethical principles is important in qualitative research because of its in-depth nature and its collaboration with human subjects (Arifin, 2018). When approaching this research, I was aware of the ethical dilemmas that might arise from the interviews such as sensitive issues and potential conflicts (Orb et al, 2001). In this research I ensured that the rights and freedoms of the research participants were protected and that they understood that no harm would be done to them during the data collection process, analysis and reporting of the findings of the study. This study involves human participants. Therefore, prior to the commencement of the fieldwork an ethical clearance from the Faculty of Humanities Research Ethics Committee at the University of Pretoria was applied for and granted. To ensure the protection of the research participants I made sure that I adhered to the Code of Research Ethics of the University of Pretoria.

Before the commencement of interviews, information about my proposed research was sent to all the selected research participants. In some cases, telephone calls were made to some of the research participants to provide an explanation of the purposes of this research and how the data collection process would work. The participants were also afforded enough time to ask questions regarding my research and to address any concerns they might have (Arifin, 2018). This was to ensure that research participants fully understood what my research was trying to achieve before taking any part in it. Subsequent to understanding and agreeing to participate in my research, the research

participants were given a consent form and interview question guide that they needed to sign, to confirm that they understood what they were agreeing to before being interviewed for this study. It was explained in clear and concise detail that participation in the study was voluntary and that interviewees could refuse to participate and withdraw at any time should they feel uncomfortable about continuing.

Permission to record the interviews and make notes was formally requested from the research participants. Although most participants were comfortable with being recorded, there were some research participants who did not want to be recorded and their decisions were accepted. After each interview the transcribed interviews were shared with the participants. The research participants were granted access to information pertaining to their interviews so that they could listen to or read the information before it was analysed for this study. The participants were permitted to make changes to some of the information that they did not want to be shared publicly. To ensure the anonymity and confidentiality of the participants, their names and identities in the data collection, analysis and reporting of the findings for this study are not revealed.

In accordance with the University of Pretoria's data storage policy, all the research data will remain stored in a password-protected format for a minimum of 15 years. All the data from the interviews and fieldwork is kept in password protected files and I am the only individual who has access to the files. In the informed consent letters, permission was requested from research participants for the data to be used for further research. This will enable me to continue with further analysis of data without having to ask for consent again from the research participants. The data collected for research is and will only be used for non-profit research and academic purposes. As already mentioned, Covid-19 posed a serious challenge during the data collection process. Therefore, in order to ensure the safety of the research participants, all Covid-19 protocols, including isolation, social distancing, wearing of masks and so on were strictly adhered to.

4.10 Conclusion

This chapter has deliberated the processes and procedures that were followed during the period of conducting this study. The aim of this research is to explore whether climate finance investments in renewable energy development in SLM have managed to promote a just transition at the local community level through contributing to employment creation, poverty alleviation and addressing

the injustices of the past. To interrogate the impact of climate finance investments on socio-economic development this chapter has explained the qualitative research approach, which was selected as the most relevant and appropriate approach for answering the questions that are posed in this research. The chapter begins by discussing the qualitative research method adopted in this research. This is followed by a discussion of the case study approach, which is adopted as the qualitative research method for the study. The following section discusses the sources of data collection and details how the research participants were selected for the study. Thereafter, methods of data collection used in this research are discussed.

This is followed by a detailed explanation of how this research was conducted. Next, the thematic analysis used for analysing data is discussed. The drawbacks encountered in the research journey are then presented. The chapter concludes by outlining the ethical considerations adopted during the research process. The following chapter presents the findings and analysis from the research. The chapter discusses the climate finance flows that have gone towards renewable energy development in SLM. It also discusses the role of key stakeholders involved in renewable energy development in SLM and explores their roles in ensuring that climate finance investments in renewable energy development in SLM contribute to socio-economic development in towns such as Prieska, Copperton, Marydale and Niekerkshoop. As discussed in the previous chapter, these small towns in SLM are confronted by the significant challenges of poverty, unemployment and inequality.

CHAPTER FIVE: RE-INDUSTRIALISATION OF SIYATHEMBA LOCAL MUNICIPALITY THROUGH CLIMATE FINANCE INVESTMENT IN RENEWABLE ENERGY DEVELOPMENT

5.1 Introduction

Existing research indicate that significant climate finance is flowing into renewable energy development in South Africa (IPP Office, 2021a), however there is still no evidence or understanding related to whether or not these investments are trickling down (Soanes et al, 2017) to vulnerable and marginalised local communities such as those of Prieska, Marydale, Nierkershoop and Copperton. As discussed in Chapter Three, the mining industry used to be a

dominant economic sector in SLM. However, according to Ledwaba (2014) mining of resources such as tiger's eye failed to deliver any significant socio-economic benefits to local communities. In this study I argue that SLM is currently experiencing socio-economic transformation through the climate finance investments in renewable energy development. During the precolonial, apartheid and post-apartheid periods the landscape of SLM was dominated by farming and mining activities. However, as argued in Chapter Three, mining activities drastically declined in the municipality over the years, while farming continued to be one of the key economic activities. Since the REIPPPP was launched, SLM has seen a shift in landscape, where the municipality is going through the process of re-industrialisation in order to exploit its significant energy resources. Also, in its IDPs SLM note the urgent need for developing strategies that will allow the municipality to fully benefit from the green energy development belt that is envisaged in the municipality (SLM, 2022). This will be carried out in order to safeguard the municipality's mining and green energy development potential. In its IDPs, SLM particularly identifies the development of renewable energy as one of the core initiatives that the municipality must capitalise on in order to strengthen the local economy and provide the much-required job opportunities for the local population.

For the purpose of this study, the concept of re-industrialisation is understood as a process of socio-economic transformation for the purpose of establishing the renewable energy industry to form the backbone of SLM local economy. Currently plans are underway in SLM to push for re-industrialisation of SLM. This is evident from the recent developments such as the Prieska Power Reserve and the Prieska Zinc Copper Project. The Prieska Power Reserve is a R9.7 billion project which is envisaged to drive South Africa's hydrogen ecosystem and contribute to the development of the renewable energy industry, while also contributing to the country's economic recovery and economic growth. Although this multi-billion project is only expected to commence in 2025, According to the projects developers it is expected "to deliver technologies for hydrogen production and ammonia linked to renewable energy, storage and distribution, and contribute substantially to South Africa's socio-economic development objectives" (https://prieskapower.com/). While the Prieska Zinc Copper Project which is owned by Orion Minerals a Copper and Zinc mining company which is expected to commence with its mining activities in Prieska, and is currently in negotiations which other stakeholders for its operations to be entirely powered by renewable energy and green hydrogen. These efforts clearly demonstrate

that there are re-industrialisation plans for establishing the renewable energy industry in South Africa, and to some extent SLM which is studied in this research.

From observing the landscape of SLM and the development of renewable energy projects in the region and reading about the planned projects such as the Prieska Power Reserve and Prieska Zinc Copper Project, it is evident that renewable energy industry is expected to play a critical role in the local economy of SLM in the near future. However, it is important to note that the sole purpose of renewable energy projects in South Africa is to supply to South Africa's national grid and contribute with socio-economic spin-offs to local communities. Therefore, it may be argued that this process has limited local embedment, apart from the expected temporary jobs during the construction and operation stages of renewable energy in SLM, however, with the expected linkages between hydrogen production, renewable energy and the IDPs of SLM there is enough evidence of a planned re-industrialisation that is happening in SLM.

In this study I argue that the planned shift from coal production at the national government level which will also result in localisation nationally will also manifest itself locally in municipalities such as SLM (where most of these developments are expected to take place), hence I argue that renewable energy will form the backbone of the local economic activities in SLM in the next coming few years. Although there is not much literature to back this argument currently, but the planned Prieska Power Reserve, the development of renewable energy projects and the Prieska Zinc Copper Project clearly demonstrate that SLM is undergoing a re-industrialisation shift. Although the potential of renewable energy on re-industrialisation can be assessed at the national level, in this research I argue that the shift that is currently unfolding on the ground in SLM confirms some sort of re-industrialisation which is driven by renewable energy transition. In addition to the developments mentioned above, SLM was also identified as one of the pilot areas for the development of Solar Parks in South Africa. The renewable energy development in SLM will certainly contribute to socio-economic transformation and spatial changes which will lead to re-industrialisation. These changes will not only have an impact in SLM, but the entire Karoo region. For instance, researchers such as Cherry Walker who are interested in the dynamics of social change in the Karoo region have argued that the "externally driven investments, designed with the national electricity grid rather than local energy needs in mind, are repositioning the Karoo" (Walker, 2019, 644). Walker (2019) further explains that:

> space and place in the Karoo (and the Northern Cape more generally) are also being redefined by major investments by international companies and their South African partners in the exploitation of the region's significant energy resources: renewable and non-renewable, actual and potential. Renewable energy projects, in the form of wind farms and solar power plants, are reshaping the landscape in several Karoo districts, while companies interested in the potential of non-renewable energy sources – shale gas but also uranium – have staked out prospecting rights over large swathes of land (Walker, 2019, 644).

This chapter seeks to provide an overview of the climate finance investments in renewable energy in Siyathemba Local Municipality (SLM). Drawing on the fieldwork and research processes discussed in Chapter Four, this chapter seeks to highlight how SLM is being re-industrialised through climate finance investments in order to exploit "the region's significant energy resources: renewable and non-renewable, actual and potential" (Walker, 2019, 644). At present, SLM has five operational renewable energy projects (these projects are discussed extensively later in this chapter), and billions of rands in climate finance have been poured into renewable energy development and exploitation of other resources in SLM. It is important to note in this research is that other resources such as green hydrogen and ammonia were not part of the scope of this research. Hence this chapter only seeks to highlights the climate finance investments in renewable energy development in SLM by attempting to detail how much climate finance has flown in the municipality since the REIPPPP was launched in 2011. In addition, the chapter attempts to determine how much of the billions of rands worth of climate finance invested in SLM has gone towards socio-economic development in accordance with the REIPPPP's socio-economic obligations. The chapter will introduce the five renewable energy projects that are operating in SLM, including the key stakeholders critical for ensuring that the climate finance investments in renewable energy contributes to socio-economic transformation in order to promote a just transition. Understanding the key stakeholders involved and their roles in promoting a just transition is critical in this study.

It is important to note that the climate finance figures discussed in this chapter are derived from the public domain, mainly from online newspapers, company websites and the figures provided by the Independent Power Producer (IPP) Office in its provincial reports of the REIPPPP in the Northern Cape. Retrieving annual company reports directly from the IPPs operating in SLM in

order to verify these figures was unsuccessful; companies referred me to the IPP Office, which made it clear that it was not at liberty to share company reports with the public. I was therefore directed to REIPPPP documents publicly available via the website, which summaries the company reports provided by IPPs (these circumstances will be elaborated throughout this study). The reason for not being allowed access to the financial reports of the IPPs can be attributed to the assertion by Morar (2019, 39) who argues that often the "IPPs are unwilling to share the initiatives they are engaged in, and the amounts spent on these in the public domain". The chapter concludes by discussing the different key stakeholders/actors engaged in renewable energy development at the local municipal level in SLM in efforts to deconstruct and understand their roles within climate finance and its implications for the just transition in SLM.

5.2 Climate finance investments in renewable energy projects in Siyathemba Local Municipality

My fieldwork and research revealed that since South Africa launched its REIPPPP in 2011, substantial amounts of climate finance in renewable energy development have been invested in SLM. From the first bidding window of REIPPPP until now five renewable energy projects have been constructed in SLM. The first renewable energy project, Mulilo Renewable Energy Solar PV Prieska, was commissioned in 2014 during the first bidding window. The other four renewable energy projects are Mulilo Sonnedix Prieska PV, Mulilo Prieska PV, Copperton Wind Farm and Garob Wind Farm. These five renewable energy projects will be discussed in detail, including how of much each project cost to provide background information about climate finance flows and the development of renewable energy projects in SLM. This process is critical in order to attempt to determine whether the climate finance investments in these renewable energy projects is consistent with what the REIPPPP has achieved in SLM in terms of promoting a just transition through contributing to local socio-economic development initiatives.

According to the IPP Office reports significant amounts of climate finance are expected to flow in SLM for the duration of the IPP projects, from construction, operation to when the plants shut down after the minimal period of 20 years (IPP, 2021b). Figure 15 below provides a breakdown of the total amounts that are expected to be spent by the IPPs in their projects in SLM throughout their lifecycle which is 20 years including the estimated jobs that are likely to accrue from the IPP

projects. However, the IPP Office report does not provide information on how much money has been spent by the IPPs in SLM thus far.

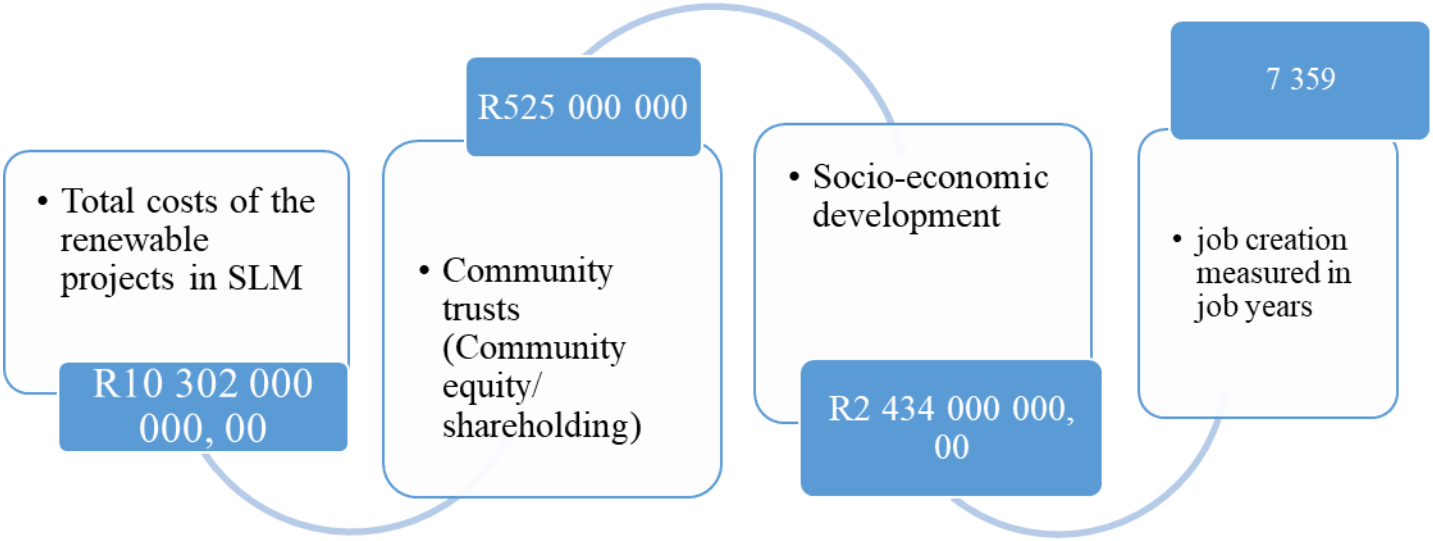

Figure 15: Breakdown of climate finance investments in renewable energy projects and socio-economic benefits in SLM over the 20 year period of the IPP projects, Source: IPP Office, 2021b.

These figures provided by the IPP Office demonstrate that significant amounts of climate finance investments in the REIPPPP and to socio-economic benefits of local communities are expected to flow in SLM over the 20-year period of the IPP projects. Despite the significant amounts allocated to socio-economic benefits of local communities as the result of investments in the REIPPPP, the investments appear to be inadequate as shown by the prevalence of poverty and unemployment in SLM. Therefore, it is critical to explore whether climate finance investments, including its socio-economic spin-offs to local communities have managed to transform the local community's livelihoods. The set-up of the community trusts and their role in ensuring that climate finance investments are distributed to local community development projects as part of the socio-economic spin-offs of the REIPPPP will further be discussed in detail later in this chapter

The following section provides a brief description of the five renewable energy projects located in SLM. This is done in order to understand whether climate finance investments in SLM have in

effect translated into socio-economic development. It is essential to grasp the background to understand how much finance has gone towards the development of these projects and what socio-economic development initiatives they are financing or supporting in SLM in order to advance a just transition at the local community level. As stated above, it is essential to note is that the figures and information provided here were generated through online research across various sources including company websites, online news sites and IPP Office official documents. No financial numbers were sourced directly from interviews. Sourcing information directly from the IPPs and the IPP Office proved to be a challenge. The IPP Office refused my request to access the annual financial reports that are provided to them by IPPs. The IPP Office reiterated the confidentiality of these reports.

Securing access to the financial records or reports of the IPPs likewise was a futile exercise as I was only able to interview the sustainability officers and SED managers of the IPP companies operating in SLM. The IPP representative I was able to interview did not have financial details related to the climate finance investments set aside for socio-economic development initiatives in SLM. Although IPP representatives interviewed were able to provide information about the programmes that are being supported by the IPPs, they had no knowledge about how much money had been invested in any of the socio-economic development initiatives. My lack of access to IPP financial reports has been detrimental to my research outcomes. Not having access to financial reports prevented me from being able to follow the money, which is a strategy I had intended to activate in this research as a decisive method to determine whether or not climate finance was flowing to local communities in SLM as promised by the REIPPPP. Although I was not able to get access to financial flows, it is a known fact that 30% of turnover of the IPPs is supposed to be spent within the 50km vicinity of the power plant. The socio-economic spin-offs as the results of climate finance investments in the REIPPPP appear to be substantial based on the IPP Office reports, however, the impact does not appear to be that significant in the local communities that were visited during the fieldwork of this study. The following section provides a background and description of the renewable energy projects that are operating in SLM.

5.3 Introducing the renewable energy projects in Siyathemba Local Community

5.3.1 Mulilo Sonnedix Prieska PV

Mulilo Sonnedix is located in Copperton, about 65km away from the town of Prieska. The project was awarded to Mulilo Sonnedix Prieska PV (Pty) Ltd in accordance with the REIPPPP procurement process during Bid Window 3. This 75MW solar plant is built on a rented 125ha site on a privately owned agricultural farm named Hoekplaas in the small town of Copperton. The solar project went into operation in the second quarter of 2016. The project was developed by a Spanish solar IPP company Sonnedix, in partnership with the South African developer Mulilo Renewable Energy and Ixowave Women in Power. The project was constructed by Juwi Renewable Energies (Pty) Ltd, which is a South African subsidiary of the German-based Juwi Group. Juwi Renewable Energies will be responsible for the operations and maintenance of Mulilo Sonnedix Prieska PV for a period of 20 years.

The ownership of the project is divided between Sonnedix, Mulilo Energy Holdings, Ixowave Women in Power and the Mulilo Prieska Community Trust. Sonnedix holds a 60% shareholding in the solar project, Mulilo Energy holds 20% while Ixowave and Mulilo Prieska Community Trust own 15% and 5% respectively. A total of about R1.3 billion was invested for the construction of the solar project, with the financial close of the project being achieved at the end of 2014 before the commencement of construction. The project investment was secured through debt funding. The debt funding for the project was provided by two leading commercial banks in South Africa, Nedbank Capital and Standard Bank.

During its inauguration in July 2016, the project was praised for its significant SED contribution in SLM during its construction stage. According to the publicly available reports, during its construction stage Mulilo Sonnedix Prieska PV was able to contribute significantly to socio-economic development within SLM. This contribution was in accordance with the REIPPPP mandate of local socio-economic development. According to Sonnedix, the solar project rollout managed to empower local communities with meaningful skills development, investment in local community projects and employment during its construction. During the project's inauguration, the owners of the project reiterated their commitment to contributing to the socio-economic development of the local communities in order to ensure that climate finance investments in SLM

contributed to the promotion of job creation, entrepreneurship development, skills development and enterprise development. The CEO of Sonnedix Andreas Mustad was quoted saying that:

> The construction phase is complete, yet this is a long-term project. We will be operating this plant for a minimum of 20 years with a local team, the local community, our local partners, and bring continued economic development and opportunities for the local community and businesses in the region (Andreas Mustad, CEO Sonnedix, 13 October 2016, Sonnedix Newsroom-ESG, https://www.sonnedix.com/news/mulilo-sonnedix-prieska-pv-project-inauguration-celebrates-its-impact-in-the-northern-cape).

Indeed, the inauguration of Mulilo Sonnedix Prieska PV raised expectations in SLM, such that even the then mayor of Prieska Mr Howard Tshume thanked the project developers for bringing much needed development to SLM. The mayor stated that the plant would "enable small businesses to emerge – thank you for choosing this area to develop our society" (Howard Tshume, Mayor of Prieska, 13 October 2016, Sonnedix Newsroom-ESG,https://www.sonnedix.com/news/mulilo-sonnedix-prieska-pv-project-inauguration-celebrates-its-impact-in-the-northern-cape). According to Sonnedix, the solar project provided employment for 1720 people during construction of which 911 were from local communities within SLM. Notwithstanding the promises made by Sonnedix at the inauguration of the project in 2016, after five years of being the major shareholding partner, Sonnedix sold its 60% stake in the solar plant to Pan-African peer BTE Renewables in 2022. This leaves open questions about socio-economic development commitments made by IPPs to local communities where their renewable energy projects are located.

5.3.2 Garob Wind Farm

Garob Wind Farm was awarded to Enel Green Power RSA, a subsidiary of Enel Green Power, during Bid Window 4 of the REIPPPP in 2015. Enel Green Power is a renewable energy company that is based in Italy; the company has renewable energy plants across five continents. The 145MW Garob Wind Farm is located on Nelspoortjie Farm near Copperton and covers a 5500ha site. Like other renewable energy projects in South Africa, the land on which Garob Wind Farm is situated is rented from a privately owned farm. The construction of Garob Wind Farm began in the first quarter of 2019 and the project entered commercial operations at the end of 2021. Enel Green

Power owns a 60% stake in equity of the wind farm, while the Khana and Garob local community trusts own 30% and 10% respectively.

A total of about R 3.9 billion million was invested in the project. The project was financed through loans from two of South Africa's commercial banks, the Nedbank and Absa groups, which are involved in financing renewable energy projects in South Africa. According to Enel Green RSA the project created employment for about 511 people from surrounding communities during its construction phase. Activities listed as part of the project's contributions to socio-economic development within local communities during construction are listed as (Press Release, Enel Green, 2021):

- Donating wooden pallets and cable drums for furniture manufacturing.
- Supporting local health workers during the pandemic by providing PPE.
- Provision of blankets to elderly care homes.
- Distributing food parcels to vulnerable households during the Covid-19 pandemic.
- Provision of fully funded university scholarships to two learners from SLM.
- Sponsoring local sporting events.
- Providing tables to high school learners.

At the time of data collection for this study, the project was planning to conduct a needs assessment in local communities across SLM to identify what kinds of assistance communities required. This assessment is scheduled to be completed before the end of 2022. At the time of data collection Enel Green was also finalising the establishment of a local community trust, which would be partially responsible for supporting the needs of local communities across SLM. As part of its commitments to socio-economic development in SLM, Enel Green Power also plans to launch enterprise development (ED) initiatives such as the Herbal Lean Incubation Programme, the provision of free WiFi to local communities and support for energy and water efficiency projects in local communities across SLM.

5.3.3 Copperton Wind Farm

Copperton Wind Farm is situated in Struisbult Farm in Copperton in the Northern Cape province. The wind project covers about 3130ha. Gestamp Wind was selected as a preferred bidder for the wind project under the REIPPPP, which is managed by the DoE. Gestamp Wind is a Spanish-based renewable energy company specialising in the development, construction and operation of wind farms across the world. The company has a footprint in Europe, Brazil, the United States, Mexico, Turkey and South Africa. The 102MW project was awarded to Gestamp Wind under Bid Window 4 of the REIPPPP. The project went into operation in 2021.

The total investment in the project was about R 2.8 billion. The community trust that is currently being set up in SLM will own a 5% shareholding in the project. Copperton Wind Farm finalised and published its socio-economic needs assessment in SLM in early 2022. During its construction the project created employment for the local population. According to the developers, during its construction the project prioritised the local communities for employment and procurement of goods and services needed during the construction phase. During its operational rollout, the project developer promised that the project would continue to prioritise local communities as per the requirements of the REIPPPP in terms of SED and ED spend and job creation. The project has committed to maximising socio-economic benefits for local communities through supporting local enterprises, skills development and prioritising local companies for procurements needs (depending on the availability of the required goods and services).

5.3.4 Mulilo Prieska PV

Mulilo Prieska PV is a solar project situated in Klipgats Pan farm in Copperton in the Northern Cape. The project covers an area of 300ha of rented agricultural land previously used for grazing. The 75MW solar plant was constructed in 2015 and went into commercial operation in December 2016. The contract for the engineering, procurement and construction of the solar plant was awarded to Juwi Renewable Energies and Sunpower Energy Systems Southern Africa (Pty) Ltd. Sunpower Energy Systems Southern Africa is also responsible for the operations of the solar plant. The project was awarded under the REIPPPP during Bid Window 3.

The project's shareholding is divided between a consortium of six owners including Mulilo, Total SA, Calulo Renewable Energy, the Industrial Development Corporation (IDC), Futuregrowth

Asset Management and a local community trust. Within the six-member consortium, the shareholding of the solar project is divided as follows: Total Energie 27%, Mulilo Renewable Energy 18%, Calulo Renewable Energy 25%, IDC 15%, Futuregrowth Asset Management 10% and Mulilo Solar Community Trust 5% (Solar Financed, 2020). The total cost of the project was about R3.5 billion. Of the R3.5 billion, 80% was financed through debt funding by the IDC, Nedbank and Absa, while the remaining 20% was financed through equity financing by the project partners.

Like all renewable energy projects in South Africa, the Mulilo Prieska Solar PV project has generated several socio-economic development initiatives for the local communities of SLM. This was achieved through job creation during the construction and operational phases of the project while at the same time making use of locally produced products to maximise localisation in the project.

5.3.5 Mulilo Renewable Energy Solar PV Prieska

Mulilo Renewable Energy Solar PV Prieska was the first renewable energy project to be constructed in SLM. The project was awarded to Mulilo Renewable Energy (Pty) Ltd during the first bidding window of the REIPPPP. The 20MW solar plant is situated in Vogelstruisbult Farm in Copperton. Mulilo Renewable Energy (Pty) Ltd entered into a long-term agreement with the landowners of Vogelstruisbult Farm. The site where the project is located covers 34ha. The construction of the solar project started in 2013 and it went operational in October 2014. The project developers are Mulilo Renewable Energy (Pty) Ltd, GRI Renewable Industries and X-ElIO Energy. The shareholding of the project is divided among Mulilo Renewable Energy, ElIO Energy and the other partners. ABB South Africa and X-ElIO Energy are responsible for operations and maintenance services of Mulilo Renewable Energy Solar PV Prieska. The total financial investment in the project was around R953 million. Similar to some renewable energy projects in South Africa, Mulilo Renewable Energy Solar PV Prieska contributed to socio-economic development in local communities through the provision of employment, enterprise development and skills development of the local population.

In concluding the project profiles presented here, it is important to note that all these projects are supported by a 20-year Power Purchase Agreement with the South African energy utility Eskom.

Therefore, the renewable energy that is generated from these projects is sold directly to Eskom at the determined prices. It is also important to note here that the total costs of the project are not accurate due to exchange rate fluctuations. The total costs of the projects were sourced from online sources and converted into South African rands. The following section introduces the actors/stakeholders who are involved in climate finance investments and are responsible for ensuring that climate finance contributes to socio-economic development in local communities in SLM as per the requirement of the REIPPPP.

5.4 Key stakeholders in renewable energy development in Siyathemba Local Municipality

In order to successfully disperse climate finance investments at the local municipality level and achieve a just transition through socio-economic development, a number of stakeholders are involved in renewable energy development in SLM. To ensure that the socio-economic benefits of the REIPPPP are realised at the local community level, given the sizable financial resources that are allocated to the socio-economic development of local communities in the REIPPPP, effective coordination and engagement between the key stakeholders is necessary and critical. This would ensure that investments in renewable energy have an impact on sustainable development. Wlokas et al. (2017) contend that strong, positive relationships between the industry (IPPs), local communities and the state are essential in order to ensure that the REIPPPP achieves the just transition in South Africa.

The stakeholders identified as playing a key role in renewable energy development and in ensuring that climate finance is distributed in local communities in SLM include the IPP Office, IPP companies, community liaison personnel hired by the IPP companies, local government (especially the Local Economic Development division of SLM) and community stakeholders. The key stakeholders in renewable development in SLM are illustrated in Figure 16. The role the stakeholders play and the challenges they face in ensuring that climate finance investments in SLM advance a just transition is critically examined in this section. It is important to explore the role each stakeholder plays, including the engagement and coordination between these various stakeholders to effectively promote a just transition in SLM. As already mentioned, to successfully implement socio-economic development initiatives that can advance a just transition at the local municipal level, robust relationships and coordination between all stakeholders in renewable energy development is critical.

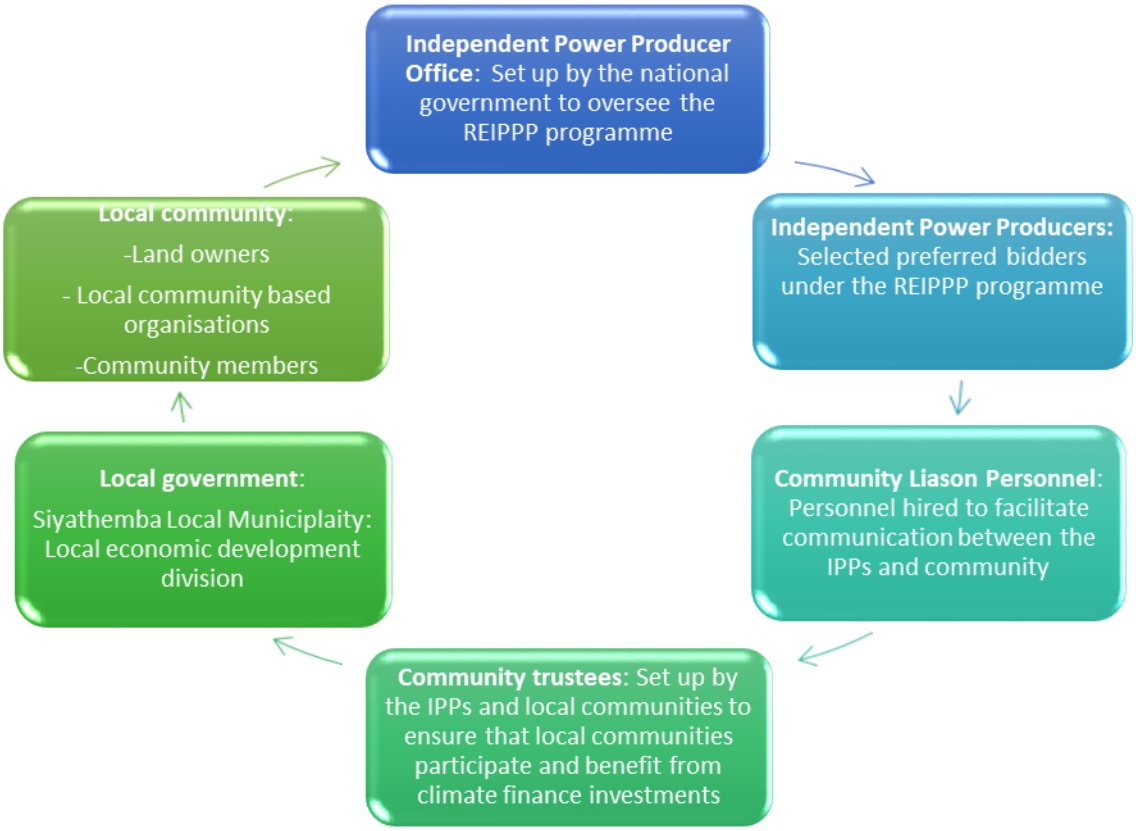

Figure 16: Key stakeholders in renewable energy development in Siyathemba. Source: created by author.

5.4.1 The Independent Power Producer Office

The Independent Power Producer (IPP) Office operates at national government level. It was established by the Department of Mineral Resources and Energy (DMRE), the National Treasury and the Development Bank of Southern Africa to ensure that the objectives of the REIPPPP are achieved (IPP Office, 2021a). The IPP Office is a semi-autonomous institutional entity within the Department of Energy (DoE), which is appointed as the implementing body of the REIPPPP in South Africa. The unit is supported by the DoE and National Treasury employees, who are in turn supported by contracted external consultants (Davies and Wlokas, 2022; Wlokas, 2015). The IPP Office is mandated by the DMRE to undertake the contract management, compliance monitoring and monitoring and evaluation of all IPP projects that have signed Implementation Agreements with the department (Interview 6).

In addition to securing electricity from renewable energy sources from the private sector the REIPPPP aims to contribute to South Africa's national development objectives, which include job

creation, social upliftment, local industry development and expanding opportunities for economic ownership in local communities where renewable energy projects are located (IPP Office, 2021a). The role of the IPP Office is to ensure that IPPs meet their obligations to socio-economic development as mandated by the signing of implementation agreements. When an IPP company is chosen as a preferred bidder an agreement is signed between the DMRE and the IPP company to deliver on the ED commitments, which are regulated through the Implementation Agreement (Interview 6). Once the agreement is in place the IPP Office is mandated to monitor the reporting by successful bidders on the performance against their obligations during the construction and commercial operation stages.

This study found that the footprint of the IPP Office is not visible at the local municipal level in SLM. However, it remains one of the critical stakeholders established to ensure that South Africa's REIPPPP is implemented successfully and that it contributes to the socio-economic development of local communities. The IPP Office's quarterly reports are built from the information that is provided by the IPPs on a quarterly basis. According to Kiragu et al (2016) the IPP Office was set up as an independent entity within the DMRE, which is mandated with planning, coordinating and administering socio-economic development projects that are sustainable and benefit local communities. However, the institutional organisation of the IPP Office at present does not allow it to deliver on such mandates as stated by Kiragu et al, (2016). This study found that the IPP Office's reporting is entirely dependent on information from quarterly reports provided by the IPP companies. In its monitoring of the reporting by the preferred bidders the IPP Office does not verify the information provided by IPPs by going into communities to observe the sustainability of the supported socio-economic development programmes. This can therefore limit the accuracy of reporting about socio-economic development programmes provided by the IPP Office in South Africa.

Although there are no motives for false reporting by the IPP companies, in some cases companies may include projects or socio-economic development initiatives that have not achieved the desired outcomes. For example, this was the case in one of the socio-economic development projects funded by one of the IPPs in Prieska to provide food security in the town. Although the project had good intentions and was well supported by both the community and the IPP during its construction it failed to live up to its expectations. During fieldwork in Prieska the project was

seen to be totally dysfunctional, and it was clear that it had failed to deliver much needed food security to the community of Prieska. This failure will be explored more closely in Chapter Seven.

In most cases, such socio-economic development projects are likely to be included as part of the reporting on the implementation agreements on economic development by the IPPs, regardless of whether or not they have had long-term socio-economic impact on the local communities. The IPP Office is typically not aware of such problems, and if they are not stated in the IPP's quarterly report they are likely to be included as one of the socio-economic contributions the IPPs have made in communities. As a result, reporting by the IPP Office on the socio-economic impacts of renewable energy projects has its limits, through being dependent on reporting submitted by the IPPs. According to Kiragu et al (2016), the IPP Office at present does not have enough capacity and resources to embrace all its functions and this is the reason for not verifying the quarterly reports.

5.4.2 Independent Power Producers (IPPs)

The IPPs are the project developers of renewable energy projects under the REIPPPP. In SLM, the identified IPP stakeholders in renewable energy development include Mulilo Solar, Enel Green Power RSA, Gestamp Wind and Sonnedix. However, Sonnedix sold its stake in Mulilo Sonnedix Prieska PV in 2022. This is noted in the profiling of the renewable energy projects in SLM in the previous section. Although the above mentioned companies were identified as the main project developers of the renewable energy projects in SLM, there are other stakeholders involved in these projects, ranging from financial institutions that contribute to financing the projects to companies contracted to construct and operate the renewable energy projects on behalf of the preferred bidders. This makes it difficult to identify the IPP stakeholder group in renewable energy development since in most cases a consortium of various companies generally develops a project together (Wlokas, 2015). However, for the sake of this study the IPP stakeholders were identified as those companies that were selected as preferred bidders under the REIPPPP, who presented themselves as the main project developers of renewable energy projects in SLM.

The IPPs in SLM are responsible for mobilising climate finance, the construction of the renewable energy plants, the development of renewable energy technology and contributing to socio-economic development of the local communities within a 50km radius of their operations.

However, with SLM being sparsely populated and all the renewable energy plants in the local municipality located in the remote small town of Copperton, the socio-economic contributions of the IPPs extends across the entire municipal area of SLM. As preferred bidders for renewable energy development in SLM the IPP stakeholders are obliged by the DoE to fulfill certain requirements, particularly in terms of socio-economic development and enterprise development spend and job creation.

Common challenges that usually confront the IPP stakeholders in fulfilling these socio-economic development obligations include limited capacity and inexperience in local socio-economic development (Wlokas, 2015; Kiragu et al, 2016). In turn these challenges can hamper the effectiveness of distributing climate finance at the local community level. To avoid such challenges some IPP stakeholders resort to hiring economic development experts in their teams (Kiragu et al, 2016). Wlokas (2015) asserts that in most cases the IPP companies have limited capacity and experience available and are still learning while implementing the projects. This was found to be somewhat true in SLM. For example, one of the SED managers employed by one of the IPP companies was a junior person with no experience or expertise on socio-economic development issues. However, having said that, another of the IPP companies had employed a senior person with extensive experience of socio-economic development and insight into the socio-economic challenges facing SLM, including previous experience of working for another energy development company as an SED manager.

Based on the findings of this study, some IPP stakeholders reported some obstacles that hindered them from fulfilling their socio-economic development obligations. These include high expectations from the local communities, lack of skills and capacity at the local community level and the need to navigate local politics in order to deliver effective socio-economic benefits to the beneficiary local communities. All the IPPs that were interviewed for this study reported that they have project steering committees, which are comprised of representatives from different constituencies existing within the local communities in SLM. These company representatives include community liaison staff, SED managers who are based in SLM and are acting as the communication channel between IPPs and local communities. Also included are sustainability managers who are responsible for sharing information with local stakeholders, updating them on the status of projects and about opportunities people can look out for from a business perspective

and how to access funding in terms of ED support. However, it is important to note that the sustainable development managers are not based on the ground in SLM but are responsible for all social corporate investments of their companies, not just the renewable energy projects located in SLM. The IPP companies in South Africa usually own more than one renewable energy project across the country. This was found to be the case for Mulilo Renewable Energy (Pty) Ltd and Enel Green Power.

The IPP stakeholders in SLM communicate with community stakeholders through social media platforms such as Facebook to promote inclusion by ensuring that the local population is not excluded from socio-economic opportunities arising from renewable energy projects in SLM. Given the benefits promised by the just transition and the high expectations of the local communities many IPPs experience discord and friction, which often require mediation in the IPP Office (Wlokas and Jhetam, 2022). This was found to be the case during the construction of Garob and Copperton wind farms. During the interviews the stakeholders from Garob Wind Farm indicated that there were delays during the construction phase of the project caused by local community members striking and blocking the road, thus disrupting the construction of the renewable energy plant (Interview 3).

Albeit claims by IPP stakeholders to have a strong presence on the ground in SLM, during fieldwork I found that the presence of identified IPP stakeholders tended to be confined to Prieska. However, the IPPs also held stakeholder engagements with communities in Marydale and Niekerkshoop. Given the tiny population in Copperton, IPP stakeholders did not have any presence there and there were no reported socio-economic development projects supported by any of the identified IPP stakeholders in Copperton. The IPP stakeholders interviewed for this research only had one team member each on the ground who was responsible for facilitating local community engagements and socio-economic development in SLM. The community liaison officers and SED managers employed by the IPP companies to represent them on the ground were people from the local communities. During interviews they displayed acute awareness of the challenges confronting the local communities and what the IPP stakeholders should do in order to address the socio-economic challenges in SLM.

This finding concurs with the research conducted by Wlokas (2015) who argues that community liaison or SED managers often have access to insider knowledge within IPP companies, especially about the funding available, while they also have insight into the desperate socio-economic conditions of the local communities. This was the case for the deployed IPP stakeholder representatives in SLM who were interviewed for this research. The IPP stakeholder representatives on the ground acknowledged that the IPP companies could only do so much for local communities in terms of socio-economic development; it was ambitious to expect that the development of renewable energy projects in SLM could address all of the socio-economic privations in the area (Interview 1).

5.4.3 Local government stakeholder: Siyathemba Local Municipality

The local municipality in which IPP projects are located plays a critical role in the development of renewable energy projects. In this study SLM is the pivotal stakeholder in renewable energy development. SLM's role is to collaborating with the IPPs when they require permits for submitting a compliant bid for the REIPPPP procurement process (Wlokas, 2015). In particular, the LED division of SLM is responsible for creating an enabling environment for renewable energy development in SLM. The purpose of the LED division is to implement economic development initiatives of the SLM in conjunction with the relevant stakeholders in the public sector, business and communities.

In SLM the LED division deals with the technical side of development and socio-economic development (Interview 7). According to Wlokas (2015), this is where IPPs can capitalise on their investments by building working relationships with technical and legal personnel within the local municipalities. However, my exchanges with representatives from the LED division indicate that these relationships have not been effectively established to ensure that the socio-economic benefits of the renewable energy development are met. The IPP companies have not been effective in building robust relationships with the local municipality. For instance, according to the LED division official, "companies do come and approach the local government and ask how they can assist the municipality on its local socio-economic development goals; however, this has been done mostly by the mining company not the solar companies" (Interview 7).

Despite the significant role that is supposedly played by local government in renewable energy development, the results from this research indicate that there is token engagement between SLM and the IPPs when it comes to implementing socio-economic development projects to improve the livelihoods of the local communities. For example, an interview with the local government official of the LED division in SLM revealed that the municipality has little say over how the community trusts are set up by the IPPs and which programmes the IPPs should spend their money on (Interview 7). The LED division official further stated that "the IPP companies are not mandated to provide services to the local communities in SLM. Therefore, they cannot go over the heads of the local municipality as this is not their jurisdiction" (Interview 7). This statement shows that local government stakeholders hold a negative view of the IPPs. Wlokas (2022a) argues that it is often ambiguous and unclear what role local government officials should play in the development process of renewable energy in South Africa. The research for this study found that since the launch of the REIPPPP it has been difficult to establish whether the local government should be involved in the formation of community structures or ensuring that the socio-economic benefits of IPP projects are aligned with local government Integrated Development Plans (IDPs) and local economic development strategies (Wlokas, 2022a).

The findings from this research indicate that despite the local municipality being one of the critical stakeholders in renewable energy development in SLM, its role in how climate finance investments are spent by the IPP companies to ensure that the economic benefits accrue to the local communities is somewhat limited. This was confirmed by the LED division official who stated that "the municipality has no say on how the companies spend their money" (Interview 7). The limited role, disinterest and lack of involvement of local municipalities in renewable energy development is documented in literature about the REIPPPP in South Africa. For instance, Wlokas and Jhetam (2022) highlight the negative sentiments shown by the local government about the IPPs with regard to their "alleged community investments", which are not visible on the ground. While Wlokas (2015) notes that both the IPP companies and the local municipalities seem to lack the will or understanding of how they could work together effectively to ensure that climate finance investments contribute to socio-economic development of local communities.

5.4.4 Community trusts

The concept of community trusts has long existed in South Africa predating by many decades the establishment of the REIPPPP. Community trusts have been used in various sectors and programmes such as mining, agriculture, industry, land reform and the construction of malls and shopping complexes in townships (Nelwamondo, 2016). In South Africa community trusts have a history of success. For example, Nelwamondo provides a list of some of the most successful community trusts in South Africa including Royal Bafokeng Nation Development Trust (mining), Sishen Iron Ore Company (SIOC), Community Development Trust (mining) and Amangcolosi Community Trust established in 2005 to facilitate land reform and restitution (Nelwamondo, 2016). Figure 17 provides an illustration of a model for a successful community trust. A community trust is considered successful if it has the characteristics presented in Figure 17.

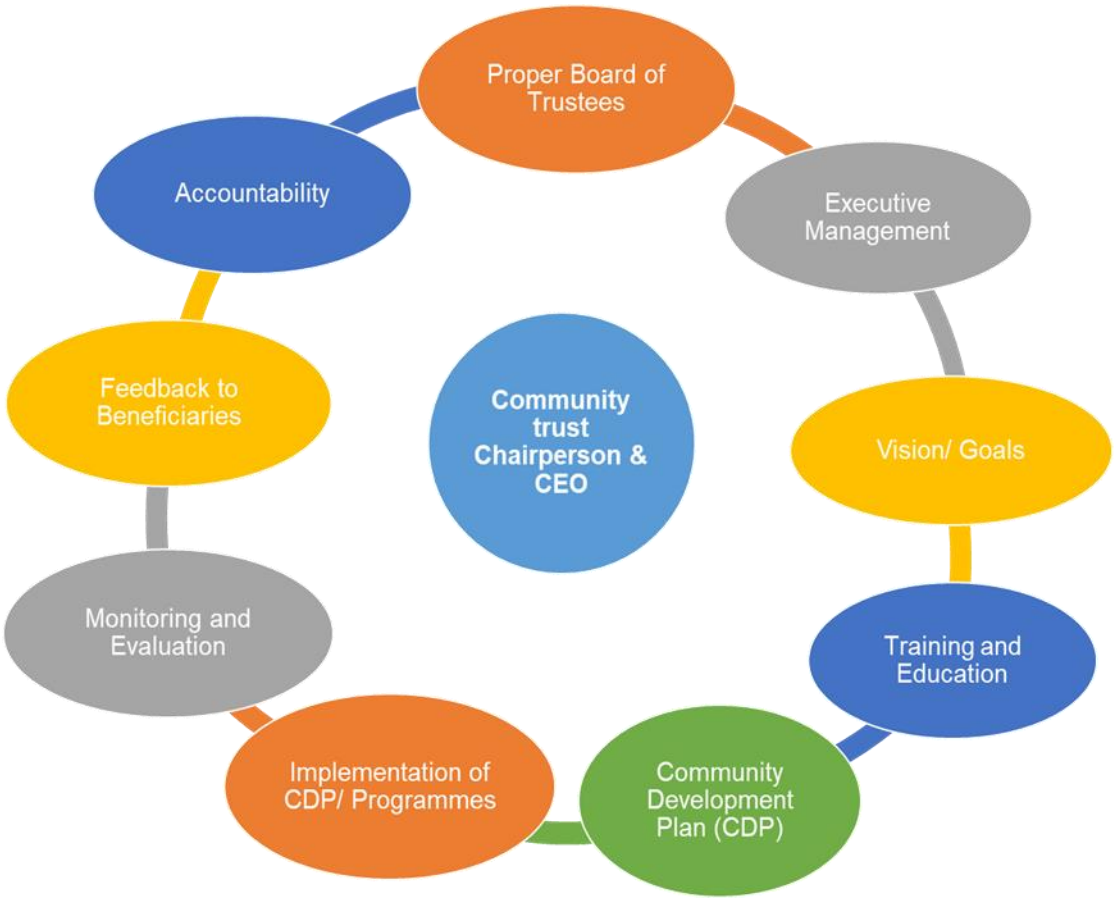

Figure 17: Model for a successful community trust.: Source: Nelwamondo, 2016.

In light of the history of success stories attached to community trusts in South Africa the REIPPPP was designed in a way that requires preferred bidders to set up a community trust to accelerate the socio-economic development impact of the REIPPPP. However, it is important to note that not all community trusts have been successful. Unlike community-based organisations established by local communities to tackle local socio-economic challenges, some "community trusts are established by corporate entities whose operations are restricted to a geographic area in response to a policy stimulus" (Khan et al, 2021, 11). IPPs are required to create their own community trusts where they operate, however in a small municipality like SLM, having multiple community trusts could result in a potential overlap in the functions of the community trusts. Therefore, this may result in the community trusts' inability to carry out their responsibilities for socioeconomic development.

In the REIPPPP community trusts play a critical role in helping advance a just transition at the local community level by ensuring that the benefits of climate finance investments are equitably distributed among local communities as stipulated in the programme's procurement process. Although community trusts in development projects are usually categorised as part of the local community stakeholders, I deemed it necessary for this research to discuss them as an independent stakeholder because of the significant role they play in the distribution of climate finance to local community-based socio-economic projects.

The IPPs operating in SLM are required to set up community trusts. Once established, the community trusts are responsible for ensuring that local communities within a 50km radius of the project's operation site benefit and participate in the economic benefits resulting from climate finance investments in SLM. However, since SLM is sparsely populated, community trusts are set up in Prieska, which is more than 50km away from the project locations. This makes it more convenient for the community trusts to serve the local communities of Prieska, Marydale, Niekershoop and Copperton, which are located far away from the operations of renewable energy projects in SLM. The primary reasons for setting up community trusts is to achieve broad-based socio-economic development and empowerment objectives in beneficiary communities, thus ensuring that climate finance investments contribute to advancing a just transition at the local community level. It is important for the community trusts to engage with local communities to ensure that the trusts and their associated IPPs understand the needs of the local communities and

remain committed to supporting the socio-economic development and empowerment programmes of the beneficiary communities. The community trusts spend some of the dividends they receive from the IPPs on funding local socio-economic programmes.

In the REIPPPP the IPPs are responsible for convening and managing meetings undertaken to set up community trusts, including providing the necessary financing. To set up a community trust, IPPs must consult widely to ensure that they are able to reach all the communities spread across the municipal area. To achieve this, IPPs must advertise for trustees in local newspapers, on social media platforms and by word of mouth. At present the REIPPPP does not have a community trust model, so it is up to the IPPs and their legal advisers to design community trust models that are suitable for delivering socio-economic benefits as required in the REIPPPP procurement process (Khan et al, 2021). Although the community trusts are set up by the IPPs, the community is responsible for nominating trustees and forwarding nominations to the IPPs. Once the nominations have been put forward the communities are responsible for electing the final trustees from the alternatives provided through a democratic voting process, which is facilitated by the IPPs (Khan et al, 2021). One of the critical challenges identified by Khan et al (2021) when setting up the community trusts is that the local communities have little say over who the trustees are even though they vote for the nominees. However, in this study this was found to not be entirely true as communities were at the forefront of deciding who would represent them in the community trust through their participation the nomination and election of trustees through a voting system facilitated by the IPPs.

Although this research indicates that there are five renewable energy projects in SLM, during field research for this study it was found that only one community trust has been established thus far. The Mulilo Prieska Solar Community Trust was formed in 2011 by Mulilo Renewable Energy (Pty) Ltd. It started functioning officially in 2018 when the administrators of the trust were appointed (Mulilo Prieska Solar Community Trust, 2022). The trust has five members on its Board of Trustees including one founder trustee, two independent trustees and two community trustees (Mulilo Prieska Solar Community Trust, 2022). Mulilo Prieska Solar Community Trust has a shareholding in three renewable energy projects in SLM. These include Mulilo Renewable Energy Solar PV Prieska, Mulilo Prieska PV and Mulilo Sonnedix Prieska PV. The trust is financed

through dividends from both Mulilo Renewable Energy and Sonnedix. Figure 19 depicts the key programme areas that are eligible for funding from Mulilo Prieska Solar Community Trust.

The reason Mulilo Prieska Solar Community Trust is the only functional community trust in SLM can be attributed to the fact that Mulilo Renewable Energy (Pty) Ltd was selected as the preferred bidder for two renewable energy solar plants in SLM and the company co-owns the third solar plant in partnership with Sonnedix. Hence it can be argued that the company considered it necessary to set up one community trust in SLM, which will have a shareholding in all the three renewable energy projects that it owns. The other two renewable projects, Garob and Copperton wind farms, became operational in 2021 and plans are underway to set up community trusts to benefit local communities. In the first quarter of 2022, Copperton Wind Farm completed its Socio-Economic Needs & Assets Assessment in SLM, focusing on Prieska, Marydale and Niekerkshoop. During interviews, Garob Wind Farm indicated that it was planning to conduct its extensive socio-economic needs and assets assessment in 2022 (Interview Number 4).

The other two IPPs in SLM are in the process of setting up their own community trusts. However, a conversation with Dr Mao Amis, who is a director of the African Centre for a Green Economy who also played a critical role in assisting me in this research provided an alternative thinking around the issue of setting up community trusts. He questioned why each company has to set up its own community trust. Since the community trust is an 'independent' entity, could it hold shares from multiple IPPs? Currently all companies who own renewable energy facilities are required to establish their own community trusts to satisfy REIPPPP's community ownership requirements (Khan et al, 2021). According to Khan et al (2021, 33) the IPPs need to collaborate in the setting up of community trusts to avoid the "serial beneficiary" challenge and enhance coordination of developmental efforts. In this way it could also ensure that there is no duplication of efforts in terms of how socio-economic programmes are delivered on the ground to local communities.

Figure 18: Mulilo Prieska Community Trust offices in Prieska (Svea Josephy, 2022).

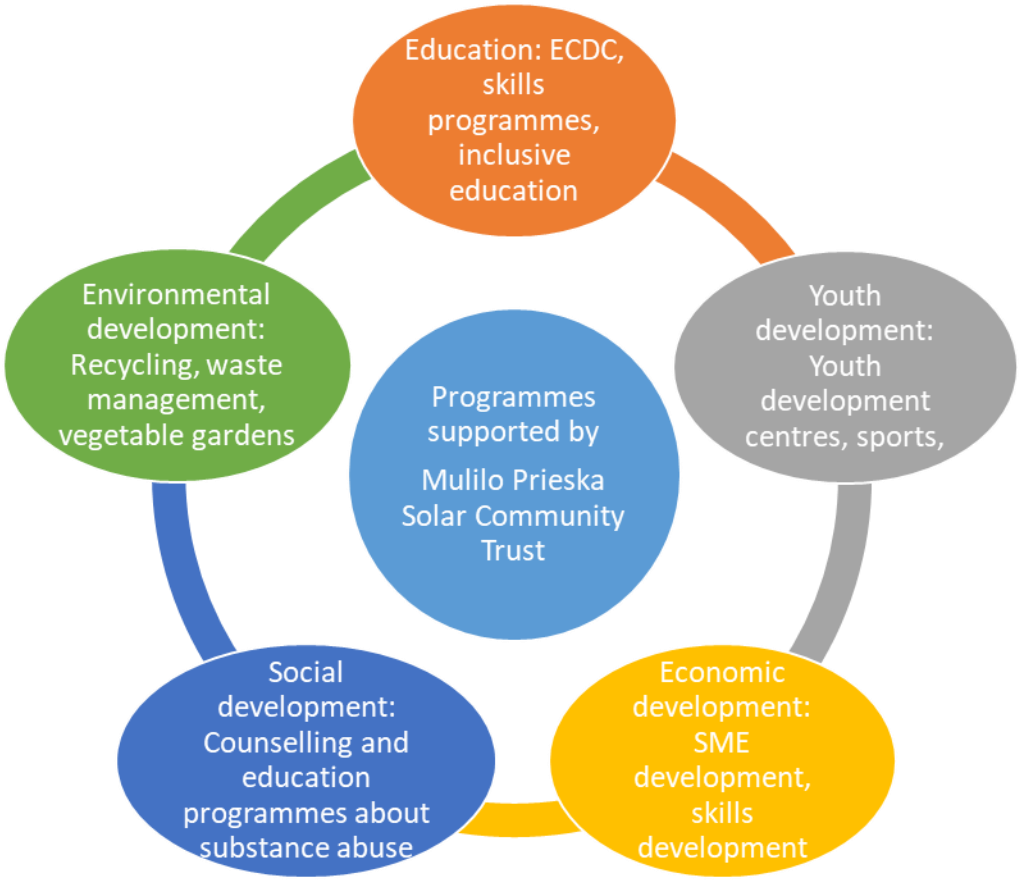

Figure 19: List of socio-economic development programmes supported by Mulilo Prieska Solar Community Trust. Source: Mulilo Prieska Solar Community Trust, 2022.

5.4.5 Local community stakeholders

Local community stakeholders are the beneficiaries of climate finance investments specifically reserved for socio-economic development under the REIPPPP. The community stakeholders in South Africa's REIPPPP include community-based organisations (schools, local community SMEs, churches, community centres, self-help organisations among others) and the general population residing within the boundaries of the communities identified as beneficiary communities by the project developer (Nkoana, 2018; Wlokas, 2015). The community trusts form part of this group of stakeholders because they too benefit from the IPP's SED and ED allocations. However, due to their importance within this group of stakeholders it is deemed necessary to discuss them independently.

This group of stakeholders is often made up of community stakeholders within a 50km area of the project location. However, in cases where there are no immediate communities within the 50km

radius or the population within the 50km radius is small, the project developer may select the nearest towns, villages or neighbourhoods as the beneficiary communities (Wlokas, 2015). This is the case in SLM. All the renewable energy projects in SLM are in the small town of Copperton, which has a tiny population primarily made up of farmers who can neither be classified as vulnerable communities nor are in desperate need of socio-economic development. For this reason, the local community stakeholders in renewable energy development in SLM consist of locally based organisations and the general population in Prieska, Marydale and Niekerkshoop.

Although farmers are not regarded as the beneficiaries in this study, they play a significant role as stakeholders in renewable energy development in SLM. Before any bid is considered, the project developer must provide proof that it has managed to secure land rights for the construction of the renewable energy project. Large tracts of open land in SLM are privately owned by farmers. This makes them one of the key local community stakeholders since they own the land that is rented out to the IPP companies. Other key local stakeholders include community-based organisations (community centres, schools, clinics, old age homes among others), locally based SMEs and the general local population that directly benefits from the SED and ED investments provided by the IPPs. These stakeholders are based in the towns of Prieska, Marydale and Niekerkshoop. All these stakeholders are supposed to benefit from the climate finance investments in SLM, either through the IPPs social responsibility investments or from the finance that is provided to the community trusts, which is meant to support local socio-economic development initiatives in SLM.

Even though they are the intended beneficiaries of climate finance invested in SED and ED programmes in SLM, these stakeholders are not involved in the planning and development stages. Instead, they feature at the implementation stage (Wlokas, 2022a) and in some cases at the operational stage of IPP projects. The findings from this research indicate that these stakeholders play a critical role during the construction stages of the IPP projects in SLM. For example, local community members from Prieska, Marydale and Niekerkshoop were hired as labourers during the construction of the plants, while several socio-economic development projects were financially and technically supported during the construction of the IPP projects in SLM. The role of local community stakeholders in SLM during the operation of IPP projects was found to be negligible. For example, local security companies are hired by IPP companies to guard the renewable energy projects. However, through the lifecycle of renewable energy projects, which is expected to be 20

years, IPP companies will continue to fund SED and ED programmes as part of their commitment and mandate.

5.5 Conclusion

This chapter has discussed how SLM is being re-industrialised through climate finance investments in renewable energy development. The data detailing climate finance investments in renewable energy development in SLM is adapted from publicly available sources such as IPP Office reports, online newspapers, renewable energy company websites and publicly available documents. The reason for using publicly available information is because it proved challenging to access financial reports from renewable energy companies that have operations in SLM. As already mentioned in the first section of this study, renewable energy companies referred me to the IPP Office for their quarterly financial reports and I was informed by the IPP Office that the financial reports provided by the renewable energy companies are not made available to the public. This barrier imposed limits on the findings of this study and has made it difficult to determine the real climate finance flows in SLM. As a result, I was dependent on the secondary data to determine the level of financial investments made into renewable energy projects in SLM, and how much of that finance has gone towards supporting socio-economic development projects in SLM.

The chapter briefly profiled each of the renewable energy projects located in SLM. The final section of this chapter discussed the different roles played by the various stakeholders involved in renewable energy development in SLM. The research found that although some stakeholder engagements do take place between IPP stakeholders, the local municipality and local communities, these were insignificant. The research indicates that there is insufficient engagement between the different stakeholders in SLM. This is explored further in Chapter Seven. To address the low levels of engagement between the different stakeholders Wlokas and Jhetam (2022) call for the IPP Office to “teach and educate” IPP companies about what is expected of them regarding the management of stakeholder relationships, including those with local communities hosting projects. This chapter has provided evidence that SLM is being re-industrialised through climate finance investments in renewable energy development. This has been achieved by discussing climate finance flows in renewable energy development and profiling the renewable energy development projects that are operational in SLM, including the different stakeholders that are involved in climate finance investments and renewable energy development. The next chapter

discusses whether the promise of a just transition through mobilising climate finance investments in SLM has been achieved.

CHAPTER SIX: THE PROMISE OF A JUST TRANSITION: WHO'S TRANSITION IS IT ANYWAY?

6.1 Introduction

The previous chapter has demonstrated how climate finance investments have been flowing into SLM to develop renewable energy projects as part of South Africa's REIPPPP. In this chapter I shift the discussion to examine whether the climate finance investments in renewable energy development in SLM have achieved the promise of a just transition, which is purported by the national government through the REIPPP programme. Although the discourse of the just transition emerged before the roll-out of the REIPPPP in South Africa, the launch of the REIPPPP was or is expected to foster this discourse of a just transition in South Africa, whereby the IPPs are required to spend 30% of their turnover within 50km radius of their operations to contribute to socio-economic development of local communities. The promise of job creation and socio-economic development of local communities creates high expectations in local communities. This is despite the fact that there are no specific requirements in terms of job creation in the REIPPPP. When the renewable energy projects are developed, the local communities expect that the IPPs will employ a large number of local people for construction and ongoing maintanance of the facilities. However, the promise of job creation often does not happen because the specifics of facilities require a certain amount of unskilled labour and often bring external skilled workers, and in some cases they also bring unskilled labour which is abundant in local communities (Khan et al, 2021). The ideas elaborated in this chapter are drawn from the work of Anantharajah and Setyowati who argue that "the need to unpack the premises and promises of climate finance is validated by emergent work highlighting discord between climate finance and its proposed benefits" (Anantharajah and Setyowati, 2022, 2).

The literature reviewed in this study suggests that climate finance investments should create socio-economic opportunities for vulnerable and marginalised communities in order to foster local communities (Okkonen and Lehtonen, 2016). However, the findings from the fieldwork and research indicate that climate finance investments in SLM have not really delivered the promise of a just transition by fostering local economic development and promoting inclusion in the just

transition. This chapter seeks to discuss these findings in relation to the conceptual frameworks of the just transition, which advocates for the transition to promote climate justice and energy justice.

Specifically, this chapter seeks to discuss the promise of a just transition in SLM and to determine the impediments to achieving a just transition in SLM. When IPP projects are established in South Africa there is a promise of job creation, and economic development of the local communities. For instance, when one of the solar companies which is studied in this research started its commercial operations it promised that it would continue to create socio-economic opportunities for the local population for the duration of facility's lifecycle which is a 20-year period. Such promises of job creation and socio-economic development can be linked to the rhetoric of the promises of job creation which is often at the centre of South Africa's government discourse and announcements which often raise the expectations of the local population, and in most cases these promises are not fulfilled. The chapter begins by discussing the promise of a just transition in South Africa. This is followed by an extensive discussion of the perceived lack of skills and capacity in SLM, which have been identified by the different stakeholders as a key challenge hindering the socio-economic contributions of climate finance investments to local communities in SLM. The third section discusses the aspirations of the local communities and explores how the IPP companies are struggling to manage the high expectations of local communities. The fourth section discusses whether development of renewable energy in SLM has achieved a just transition in accordance with the just transition principles that are deliberated upon in Chapter Two of this research.

6.2 The promise of a just transition by climate finance investments in South Africa's renewable energy development

At the national government level, the primary mandate for mobilising climate finance investments in renewable energy development is to secure renewable energy from the private sector to decarbonise South Africa's energy sector. In addition to securing renewable energy, specifically in the REIPPPP, the programme is designed to contribute to the broader national development objectives of job creation, social upliftment, broadening of economic ownership and environmental sustainability especially in local communities where IPP companies operate (IPP Office, 2021a). Given the importance of the socio-economic development component in the REIPPPP, a failure to deliver on economic and community impact by IPPs can result in the PPA being terminated (Baker and Wlokas, 2015). As a result of the promise of socio-economic

development by the REIPPPP, the IPPs are legally required to contribute to socio-economic development of local communities located within a 50km radius of their projects' operations. However, as already discussed, in the case where there are no immediate communities within the immediate vicinity of the renewable energy project, the IPP company can extend its socio-economic development initiatives to local communities beyond the 50km radius. This was found to be the case in SLM.

In SLM the development of renewable energy projects is seen as a way of lifting the local communities out of poverty through job creation and supporting local businesses. This is despite local economic benefits being deemed as socio-economic spin-offs as a result of the investments in renewable energy development. This promise of development has brought optimism for most of the local population and businesses, which have struggled to benefit in South Africa's economy because of limited economic opportunities in the municipality. The development of renewable energy companies in SLM is expected to create much needed jobs for the local population. As a result of the climate finance investments in renewable energy development in SLM, the number of small businesses rose as the anticipation for providing services and goods to the renewable energy companies as mandated by the REIPPPP grew (Interview 10). According to South Africa's REIPPPP, locally based SMEs should be prioritised for tendering for jobs issued by the renewable energy companies, while socio-economic development and job creation for the local communities should be prioritised by the IPPs. However, based on claims made by the local business forum, which claims to represent "The People of Siyathemba Municipality", this is not the case on the ground (Interview 10). For instance, the memorandum that was sent by "The People of Siyathemba Municipality" to the IPPs claimed that:

> The Department of Energy under the Renewable Energy Independent Power Producer Procurement Program ensures that bidders make an extensive contribution to Economic Development. Particularly Job creation, Enterprise Development, and Socio-Economic Development. The People of Siyathemba has however noted with great disappointment that selected bidders and their contractors ignore these aspects and is of the view that such does not apply during the contraction phase of the energy plants. The IPPs are accused of ignoring the fact that the greatest opportunity to impact the local economy and to make a significant contribution to the transformation of the local people's lives is during the

> construction phase. We have learned by experience that our people continue to be exploited during this period and once the construction is completed, our people are left with unemployment and our local economy goes down faster than a crashing airplane. If the context of locals must be legally challenged, make NO mistake, we are ready to do such. (The People of Siyathemba Municipality.

In the REIPPPP the promise of socio-economic development is made by the renewable energy development to promote a just transition through the creation of jobs, enterprise development, local content and promotion of local ownership through the creation of the local community trusts (Wlokas, 2016). As part of the bidding process in the REIPPPP, the IPP companies are expected to conduct a high-level needs assessment in the local communities where their operations will take place (Interview 4). The promises of socio-economic development are made during such processes when communities are consulted to determine the pressing challenges that can be addressed by the renewable energy companies as part of their socio-economic development commitments to local communities. Although socio-economic development in SLM is promised by the implementation of renewable energy projects in most cases the expectations of the local communities are not fulfilled. However, in some cases the expectations of the local communities might not necessary be aligned with the mandate of the IPPs and their assigned budgets. This is evident from the statement above, which is extracted from the memorandum that was sent by The People of Siyathemba Municipality to the IPP companies operating in SLM to express their grievances about the exclusion of local communities in renewable energy development.

In an interview conducted in Prieska, two members representing the local business forum and community forum put forward their view that the IPP companies were failing to meet their promise of supporting local businesses by awarding tenders to supply services to the IPP companies. They asserted that during the construction phase of projects, IPP companies appointed businesses from outside of SLM, and "our local businesses are appointed as subcontractors for minor jobs such as installing fences and electrics" (Interviews 10 and 11). A member of the local business forum further claimed that IPPs used the local communities when they were preparing their bids for submission in the REIPPPP. However, once their proposal was accepted the IPP companies did not deliver on their promises:

> They use us during the feasibility studies. They come to us and ask how they can have a positive role to impact local lives. However, when the constructions start we see a different mind-set, we see a different mind-set with doing business with the local based SMEs (Interview 10).

The opinions expressed by the forum members demonstrate that local businesses in SLM are not satisfied by the level of ED support provided by the IPPs. Another issue raised by community members during fieldwork was that the jobs generated by IPPs were temporary and required unskilled labour; most jobs were needed during the construction phase. The issue of unsustainable jobs created in renewable energy development in SLM will be explored in detail in Chapter Seven.

6.3 The perceived lack of skills and capacity among local populations and local businesses

The IPPs operating in SLM argue that the local SMEs do not have the necessary skills and capacity to provide the services and goods that are required during the construction and operation of the renewable energy projects (Interviews 1, 2, 3, 4 and 5). This issue was raised during interviews conducted with the different stakeholders in SLM. The lack of capacity in SLM is visible at the local municipality level. For instance, the LED division in SLM has only two employees who are in charge of the socio-economic development of the entire municipality. This makes it difficult for the local municipality to engage with IPP stakeholders and to hold them to account for their obligations in terms of SED and ED. The issue of skills shortages and lack of capacity was raised by both the local government and IPP stakeholders who were interviewed for this research:

> The local population and businesses do not have enough capacity and skills to tap into the opportunities created by the development of renewable energy in Siyathemba Local Municipality. This forces the IPP companies to bring in skilled people and experienced businesses from outside the municipality (Interview 7).

> One of the key challenges we are currently facing in Siyathemba Local Municipality is the lack of capacity and skills among the local population and businesses and this challenge of skills and capacity is depriving them of opportunities that are created by the renewable energy development in their municipality (Interview 4).

> Mostly there is a lack of capacity in local communities. Currently the people working in the plants are mostly people coming from outside Siyathemba Local Municipality because most local people do not have the necessary skills to operate the plants. The people that are required to run a plant are skilled people in areas such as engineering and those skills are very scarce among the population of Siyathemba Local Municipality (Interview 2).

Skills shortages and lack of capacity among the local population and local SMEs appear to be the major constraint that is depriving local communities of an opportunity to benefit from the socio-economic opportunities that are created by the development of renewable energy in SLM. Another significant finding of this research is that even those community members who are chosen to serve on the boards of community trusts are chosen based on their popularity rather than on their qualifications or capacity to engage in complex discussions about the financing of renewable energy development. This is therefore hindering IPP companies from achieving the promised socio-economic contribution that is mandated as part of renewable energy development in SLM. The interviews conducted with IPPs indicate that as part of the promise of fostering a just transition through effective participation of local communities in renewable energy development in SLM several steps have been undertaken to equip local communities and businesses with the skills necessary in the transition (Interview 1).

According to one of the IPPs, the skills shortage in the municipality has been identified as a stumbling block in the community (Interview 5). Therefore, the company is presently focussing on skills development among the youth to prepare them for the kinds of roles that will be required in the renewable energy sector in the future. According to the LED division official in SLM the IPP companies need to focus their SED commitments on education, especially at the primary and high school level and to encourage the youth to take up subjects such as mathematics and physics that will align them directly with the skills that are required in the just transition (Interview 7). This would in turn ensure that the promise of a just transition is achieved in SLM.

At the moment the IPP companies in SLM appear to be more concerned with ticking the box on their socio-economic commitments in the local communities, rather than focusing on preparing the next generation for the future opportunities that will be created by the just transition. This is evident from several social welfare initiatives that are supported by the IPPs in SLM. However, there are

skills development programmes that are implemented by the IPPs that are targeting the youth within local communities. However, my fieldwork and research found that the skills programmes being undertaken by IPPs are not appropriate to ensuring that the local population will be able to effectively benefit from climate finance investments in SLM.

The skills development programmes undertaken at present include computer training or work readiness training. However, such skills are not sufficient to expand community participation in renewable energy development in SLM to advance a just transition in the local communities. Apart from the frustrations reported above, some climate finance contribution to SED has been directed towards supporting local Early Childhood Development Centres (ECDCs), primary schools and high schools in SLM, with the hope of improving education levels and encouraging learners to undertake subjects such as physics and mathematics to align them with the opportunities created by the just transition in SLM. However, it is not clear whether this support is sufficient to prepare learners for the skills that will be required in future as the transition garners support and pace in SLM.

Even though IPP companies identified the lack of skills and capacity as the main hindrance for delivering the on promise of a just transition in SLM, these claims were refuted by the local business forum whose members said it was an excuse offered by IPP companies for not including local SMEs in renewable energy development as it is stipulated in South Africa's REIPPPP (Interview 10). This concurs with the findings of research conducted in the Northern Cape by Morar (2019) who argues that irrespective of the existing belief that there is shortage of skills and capacity within the local population and SMEs, the reason for the limited opportunities provided for the local communities and SMEs could be the lack of interest by IPPs in South Africa's economic development. This argument to some extent provides a clarification for the conflicting views between the IPPs and the local business forum. According to the local business forum its members have enough capacity and skills to participate in renewable energy development in SLM. However, their participation is denied by the IPP companies who bring in their own companies for the construction and operations of the renewable energy projects without giving the local SMEs the opportunity to demonstrate that they are able to do the work that is required. (Also see the claims made by the local business forum and the people of Siyathemba Local Municipality in their memorandum sent out to businesses operating in SLM, Appendix 1.)

> The chamber guys (business forum members) have enough capacity and skills, not just monetary capacity but the networks of business ventures that can execute the work, but the IPP companies refuse us the opportunity to participate because they are saying we do not have the necessary skills without even trying our businesses (Interview 10).

Regardless of claims made by the business forum's representative, this study found that many of the businesses within the forum were struggling with issues such as financial statements and tax returns. To remedy this, one of the solar companies provided financial support to a local accountancy firm to help local SMEs address such issues so as to be eligible to apply for tenders. Moreover, local SMEs were primarily inclined to tender for government jobs in construction, civil engineering, maintenance of solar plants and provision of services such as security and food services to the IPP companies and other businesses in SLM. The findings in this study indicate that the local SMEs lack capacity to be effectively included in the complicated construction of renewable energy projects. Despite the local business forum's claim that local businesses are excluded in renewable energy development, according to the interview with one of the renewable energy companies operating in SLM the services of two local based SMEs were acquired during the construction of its wind farm (Interview 4).

6.4 High expectations and challenges of managing local community expectations by Independent Power Producers

The promise of a just transition at the local municipal level creates high expectations within the local population. When the expectations of socio-economic development are not met by the IPPs, it leads to rising levels of frustration among the local population and businesses. For instance, in the REIPPPP, the IPPs have been criticised for raising expectations within local communities and failing to realise them (Wlokas, 2016). The levels of expectation in local communities need to be managed by the IPPs to mitigate the feelings of frustration that may arise when projects do not fulfil their promises of socio-economic development to local communities. At present IPPs are struggling with managing the expectations created by the just transition in South Africa. One of the representatives of the renewable energy companies in SLM acknowledged the difficulties related to dealing with the expectations of the local communities who assumed that IPP projects would offer employment opportunities to everyone, while on the other side SMEs were also expecting tenders from the IPP projects (Interview 3). To mitigate the challenges resulting from

unrealistic expectations among local communities, Wlokas et al (2012) propose the establishment of a concrete and sufficient relationship between IPPs and local communities. This should be set up during the early stage of the application process to ascertain potential community benefit structures, beneficiaries and appropriate socio-economic measures, which can be designed for the local context.

A study on the REIPPPP conducted by Baker and Wlokas (2015) found that the promises of the just transition in South Africa had magnified expectations among community members to such a degree that when these expectations were not met incidents of strikes and social unrests were likely to occur. Such actions have had a negative impact on the timelines for several construction schedules and commercial operations. In SLM, one such incident occurred during the construction of the Garob and Copperton wind farm projects. Although the strike was not directed to the renewable energy projects per se, it had a negative impact on project timelines. The social unrest was started by a group of disgruntled local community members (representatives of the local business forum and the community forum claiming to represent The People of Siyathemba) who argued that they were excluded from the business opportunities created by mining and renewable energy development in their municipality. This was reported in the media (see Appendix 2). The protests delayed construction when roads were blocked by striking members of the community. This was confirmed during the interview with one of the IPPs in SLM. The IPP company stated that the strike caused transportation interruptions that resulted in the site being closed for several days (Interview 3).

Although the protests that took place in SLM were not directly targeting the renewable energy projects in the area, there were further grievances that were raised against the renewable energy companies. For instance, a memorandum was prepared and sent by the local business forum to the mining and renewable energy companies operating. The memorandum (Appendix 1 below) advocated for local businesses and communities to be included in the business and employment opportunities created in SLM. In the wake of the strike, local communities participating in it were portrayed in the media as thugs and mafia (see Appendix 2) whose individual interests prompted them to interfere with development in SLM. The local government on the other hand, described them as a “pressure group” hired to disrupt progress in the municipality. Apart from the labels assigned by local government and the media, the protest actions demonstrate that if the

expectations of local communities are not met during the development of renewable energy projects, such incidents are likely to occur. The actions that were taken by the local community members demonstrate that when the just transition promises are not met by the developers, frustrations can arise within the communities leading to the disruption of construction and operation of IPP projects.

The next section discusses whether climate finance investments in SLM have succeeded in promoting a just transition. This is explored by examining the promise of a just transition in relation to the just transition conceptual frameworks, which are discussed in Chapter Two of this research. The findings from this research indicate that the climate finance investments in renewable energy development in SLM have not comprehensively managed to promote a just transition in terms of advancing the conceptual frameworks of climate justice and energy justice. For instance, the findings from my fieldwork and research indicate that local communities in the small towns of Prieska, Marydale, Niekerkshoop and Copperton continue to be confronted by poverty, unemployment and inequality, while social grant dependency and underdevelopment continue to be visible across the entire municipality. This situation is described in detail in Chapter Three.

6.5 The socio-economic development contributions of climate finance investments in the context of the just transition principles

An effective just transition must promote inclusion and uplift the marginalised voices, while also ensuring that the costs and benefits of the transition trickle down to every individual in society (Baker, 2020). In South Africa the just transition places strong emphasis on the societal challenges that the country faces, including poverty, unemployment and inequality. So, for the transition to be considered as just and fair in the context of South Africa it must address the aforementioned challenges while simultaneously addressing the issue of extreme dependence on coal for energy generation. This section seeks to interrogate climate finance investmentsin renewable energy development in SLM to deliberate on the extent to which it creates the conditions for a just transition for local communities by addressing energy justice and climate justice within the local communities (Davies, 2022). This section sets out to discuss the complex story of reading close to the ground in order to understand the implications of climate finance in promoting a just transition at the local community level in SLM.

6.5.1 Energy (in)justice in renewable energy development in Siyathemba Local Municipality

The academic literature discussed in Chapter 2 purports that climate finance should seek to enhance effectiveness and fairness in the just transition. The linkages between climate finance and a just transition for local communities where the renewable energy projects are constructed has rarely been explored in the just transition literature in South Africa. Most of the literature in South Africa has focused on the communities and workers that are or will be directly affected by the transition, for instance, communities that are in coal dominated areas in the country. Most of the research in renewable energy development, more specifically in the REIPPPP, has focused on exploring the promise of a just transition in relation to job creation, SED and ED, local content utilisation and local community ownership. Less attention has been paid to the implications of climate finance investments in renewable energy to promote the principles of energy justice and climate justice in local communities.

The findings from my fieldwork and research indicate that billions worth of climate finance investments have flowed into SLM since the first renewable energy project was constructed. However, these new investments appear to have fallen short of promoting a just transition for the local communities in accordance with the principles of energy justice.

The findings from my fieldwork and research indicate that significant climate finance investments have flowed into SLM since the first renewable energy project was constructed, however, despite the significant climate finance flows, socio-economic spin-offs as a results of these investments in the REIPPPP have fallen short of addressing the socio-economic expectations of local communities. The justice element of the transition in renewable energy development in SLM has not been effectively mainstreamed, thus resulting in the failure of climate finance investments to address inequality, poverty and unemployment by applying justice in the areas of climate and energy (Heffron and McCauley, 2018). For example, notwithstanding significant investment in renewable energy projects in SLM, energy poverty has not been eradicated and local communities continue to pay exorbitant tariffs for electricity. At the same time, energy provision in local communities remains unreliable and subject to regular power cuts (load-shedding), as is the case across South Africa.

The reason for high electricity prices in SLM is because IPPs are contracted through PPAs to sell their generated electricity directly to Eskom, which in turn sells it back to local communities at an inflated tariff. Seemingly, the REIPPPP contributes to an electricity-intensive model, which does not address the issue of affordability at a household level (Baker, 2014) for communities such as Prieska, Marydale, Niekerkshoop and Copperton. This is a result of South Africa's electricity regulatory regime, which dictates that the IPPs must supply direct to the national grid as opposed to both the grid and off-grid interventions such as mini-grids. This makes the transition in SLM an unjust process as it has not meaningfully addressed the issue of cost and affordability. Although this research did not set out to determine how much communities in SLM spend on electricity each month, the assumption that local communities spend significant amounts on electricity can be drawn from a nation-wide survey, which found that households in South Africa were spending more than 10% of their household income on energy needs (National Planning Commission, 2019).

According to the interviews conducted with the local government in SLM, there are on-going negotiations between the local government and the IPPs operating in SLM to address the energy injustice issues in SLM (Interview 8). The municipality is seeking help from the IPP companies to clear its debt to Eskom and disconnect from the grid (Interview 7). However, while such discussions are occurring at the local municipality level, the decision for SLM to withdraw from the grid can only be taken at the national government level. However, this would be impossible since local municipalities are not allowed to get off the national grid by law. The indebtedness of the municipality is largely a local governance issue, as they are re-sellers for Eskom, but have failed to remit the revenue they have collected as a result of selling electricity on behalf of Eskom. Such processes raise questions about the failure of local municipalities to make profits from selling electricity to local communities, including the top-down policy making in the REIPPPP where local municipalities do not have the power to decide, but must follow the national government policies or agenda.

6.5.2 Procedural (in)justice in renewable energy development in Siyathemba Local Municipality

To be considered just and equitable the transition must ensure that community members and those impacted by renewable energy development have a say in shaping the course of development. This is to make sure that the transition does not generate a new sense of injustice surrounding the

processes of community engagement and involvement (McCauley and Heffron, 2018). The findings from this research indicate that although the just transition in South Africa advocates for inclusion of all the stakeholders in the development of renewable energy projects, in terms of policy development and bidding process in the REIPPPP the procedural justice element of the transition is limited. The bidding process of the REIPPPP takes place at national government level, where the participation of local government and local communities is not considered. Hence, I argue that local communities and local government are seen as passive and unable to make a meaningful contribution to the selection of the preferred bidders and policy in the REIPPPP (Lo, 2021). Despite the previous assertion, it is important to note that the selection of the preferred bidders is more of a technical process, therefore there is minimal value that the participation of the local communities and the local municipalities can bring to the selection process of the preferred bidders in the REIPPPP. However, given the local community expectations and poverty which is prevalent in communities such as Prieska, Maryadale and Nierkershoop it would be critical to include the local government and communities in high decision making. The voices and concerns of the local communities and local municipality also need to be considered in the selection process of the bidding process. This would be critical in establishing strong relationships between the local communities, the local municipality and the IPPs selected as the preferred bidders to construct their renewable plants in local municipalities.

The limited level of engagement with local communities and local government by the IPP Office and the DoE during the bidding process was found to be the key issue perpetuating procedural injustice in renewable energy development in SLM. Renewable energy development in SLM at presetn follows a top-down approach where all important decisions about policies are made at the national government level without involving local communities and the local government. Furthermore, national government support for just transition projects that are designed and implemented by the IPPs and the community trust in local communities is non-existent. These findings reveal the disjuncture between policy formulation and implementation at the local government level. This demonstrate a lack of coherence between the decision making at the national level and local government involvement.

Based on the findings of this research, IPPs visit local communities only when they want to submit their bids and return to the local community only if they have been chosen as the preferred bidders

in the REIPPPP. Full participation of local communities and the local government only takes place once the company has been selected as the preferred bidder. During interviews, concerns were raised by the local government about the approach followed by IPP companies when they negotiate to secure land rights for the construction of their renewable energy projects in SLM. The IPPs communicate directly with landowners, thus excluding the local municipality and other stakeholders such as farmworkers. Such processes promote exclusion as other stakeholders are not included in the development conversations. From the findings of this research there is a clear obligation to ensure that the needs of all stakeholders be incorporated into renewable energy development in SLM in order to facilitate effective participation in renewable energy development in the municipality. At present the just transition in SLM is not equitable and democratic because it does not involve all stakeholders in renewable energy decision-making (Lee and Byrne, 2019).

6.5.3 Restorative justice in the renewable energy development in Siyathemba Local Municipality

South Africa's REIPPPP is designed to ensure that recognition / restorative justice is achieved by the programme, especially given that most of South Africa's renewable energy projects are located in remote and previously disadvantaged communities. To achieve restorative justice in South Africa renewable energy development seeks to build and enhance existing mechanisms such as B-BBEE (Presidential Climate Commission, 2022). This is to ensure that previously disadvantaged groups fully participate in the renewable energy development. The renewable energy development programme in South Africa is designed to address past, present and future damages to individuals, communities and the environment and provides a framework for remedying the situations of harmed or marginalised communities (Montmasson-Clair, 2021).

In the case of SLM no immediate distinctive harms to the local community or individuals were identified as result of the renewable energy development, while measures have been taken to ensure that local communities effectively benefit from renewable energy development. As part of the REIPPPP, IPPs are mandated to contribute to socio-economic development of the local communities by spending a certain amount of their profits to promote economic inclusion, local ownership and participation especially for vulnerable members of communities such as women and the youth (Presidential Climate Commission, 2022). Regardless of commitments made to the idea of justice in renewable energy development in SLM, instances of recognition injustice were found to be persistent. For instance, there was an outcry from local SMEs who complained that

they were not given a fair opportunity to participate in renewable energy development in SLM even though most of their businesses were 100% black-owned and some were owned by women. This provides a picture of what I call restorative injustice in terms of the REIPPPP.

6.5.4 Distributive justice in renewable energy development in Siyathemba Local Municipality

Distributive justice advocates for fairness in the process of sharing costs and benefits created by energy development across society (Lee and Byrne, 2019). To ensure equitable benefits in the REIPPPP for local communities, IPPs are mandated to contribute to job creation, to enhance local participation of local communities, protection of local content, promotion of local manufacturing and promotion of community ownership and skills development of the local population (Baker, 2015). This is to ensure that communities effectively benefit from the development of renewable energy in their local municipality. Although policies and measures are in place for ensuring that communities benefit equally from the renewable energy development in SLM, the findings from this research indicate that the local population is not equipped with the necessary skills to ensure that they fully participate in and benefit from renewable energy development. This is evident from the fact that most workers from local communities in SLM were employed as labourers during the construction of renewable energy projects, because of the perception that they lacked skills. At the same time, local SMEs were side-lined from providing services and goods to IPP companies, again because they were perceived to lack skills and capacity.

The local municipality is similarly not equipped with the necessary resources in terms of human capacity and skills to ensure that renewable energy development in SLM contributes to the economic development of the municipality. This is evident from the fact that there are only two employees in the LED division of SLM who are tasked with ensuring local economic development across the entire municipality. Overall, although the policies are in place for ensuring that the costs and benefits of renewable energy development in SLM are shared equally, renewable energy development in the municipality has thus far done little to promote distributive justice in the municipality. For instance, renewable energy development in SLM has not done anything to address the issue of the financial burden that results from high electricity costs in the municipality, while little has been done in terms of skilling and training the local population to be able to effectively benefit from climate finance investments in renewable energy development.

6.6 Conclusion

This chapter has discussed the promise of a just transition by climate finance investments in renewable energy development in SLM. The development of renewable energy projects in SLM has inspired so much hope among local communities. However, my research and fieldwork has found that IPP companies are failing to meet the expectations of local communities. Skills shortages and lack of capacity among the local population, local municipality and local SMEs have been found to be the central constraint on the achievement of a just transition in SLM. The chapter has discussed the concept of a just transition in order to provide a clarification on whether or not climate finance investments in renewable energy development in SLM have resulted in the promotion of energy justice. Although policies and measures are in place to ensure a just transition in SLM, challenges remain, and these challenges are an impediment to achieving the just transition in SLM. The following chapter discusses the socio-economic development contributions of the IPPs in SLM to determine whether these contributions are sufficient to promote the just transition and to outline the challenges and complications associated with the effectiveness of climate finance investments in promoting a just transition in SLM.

CHAPTER SEVEN: MICRO COMMUNITY DYNAMICS AND THE FRAMING OF THE SOCIO-ECONOMIC IMPACTS OF RENEWABLE ENERGY DEVELOPMENT IN SIYATHEMBA LOCAL MUNICIPALITY

7.1 Introduction

This chapter discusses the community struggles and dynamics among key stakeholders in renewable energy development in SLM and examines the socio-economic benefits of renewable energy development in SLM. At present the impact of the socio-economic development on local communities in SLM remains unknown, while the role of various actors at the local government level remains a complicated issue that needs close examination. For example, Wlokas (2022, 30) argues that at the moment the "stakeholders have various and diverging interpretations of 'what needs to be done when', of which benefits go to whom, and of the roles of different local stakeholders". Wlokas further contends that little has been done at this point in the programme to inform, organise and mobilise communities and other stakeholders across the REIPPPP landscape for collective coordination to identify opportunities and challenges linked to the REIPPPP (Wlokas, 2022b).

This chapter seeks to provide an illustration of the complicated engagements between various stakeholders in renewable energy development in SLM. Notably the chapter seeks to show how the engagements and interactions between the key stakeholders in renewable energy development in SLM result in the success or failure of achieving effective socio-economic benefits in SLM. The first section critically discusses one of the socio-economic development projects that was supported by one of the renewable energy companies in SLM. This is done to set the scene for the chapter by providing a critical analysis of some of the challenges that result from the ineffective contribution of climate finance investment to socio-economic development in SLM.

The second section of this chapter explores the contestations and conflicting interpretations at the local municipality level. The third section examines the socio-economic contributions made by IPPs in SLM, and raises the question of the sustainability of the socio-economic development initiatives supported by IPPs to determine whether these initiatives have indeed promoted a just transition in SLM and whether they have the ability to contribute to long-term sustainable socio-economic advancement. The fourth section discusses the complex situation of reporting and monitoring the socio-economic contributions of climate finance investments in local communities by the IPP Office, while the final section discusses the importance of the relationship between land and renewable energy development.

7.2 Grappling with implementation: A case study of the hydroponic project implemented in Prieska

To begin this chapter, I discuss the complex story of one of the socio-economic development projects that was funded by one of the renewable energy companies in Prieska to address food insecurity in the community. In 2020, during the peak of the Covid-19 global pandemic one of the solar companies funded the implementation of a hydroponic project in Prieska to address food insecurity in the community. Hydroponics is a technology suited to enhancing the production high-quality yield cash crops. The technology can be adapted to allow people to grow crops regardless of constraints such as scarcity of water, land and labour. The technology can be installed anywhere and can be adapted to suit the availability of land and space for installation.

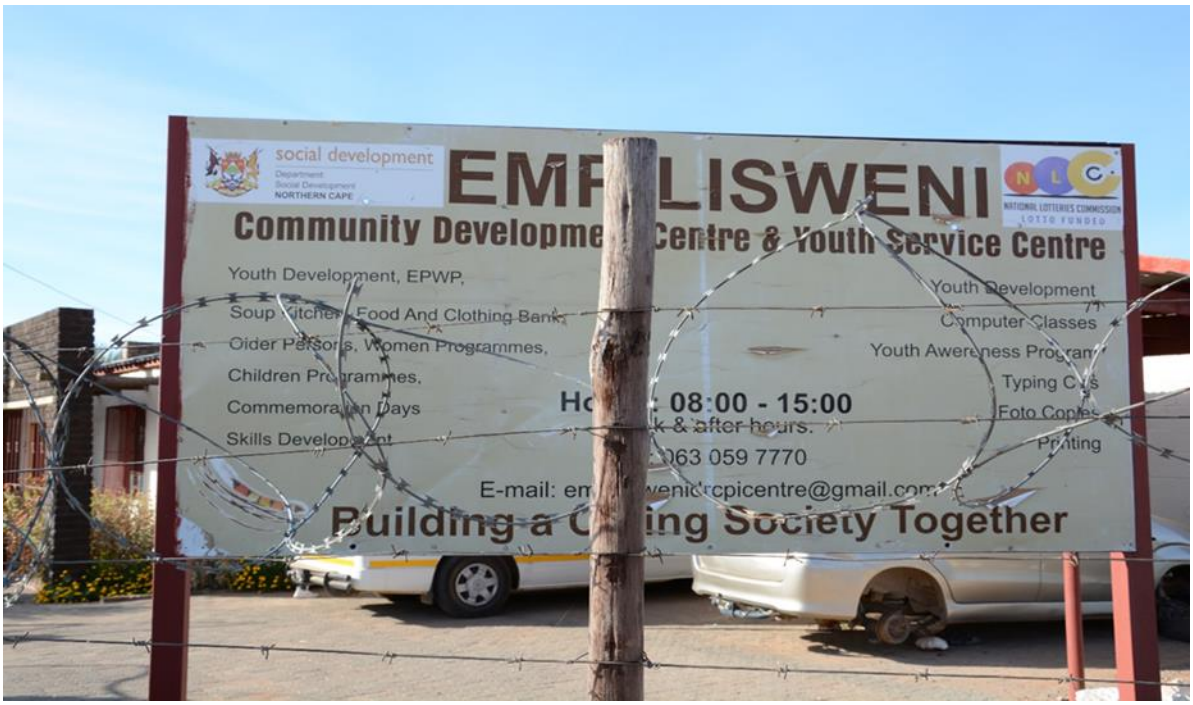

Figure 20: Sign outside Empilisweni Community Development Centre and Youth Service Centre (Svea Josephy, 2022).

To implement the project, the renewable energy company contracted an external technician to install the hydroponic technology in Empilisweni Community Development Centre and Youth Service Centre, a non-profit organisation (NPO) operating in Prieska with the aim of contributing to socio-economic development within local population. As an NPO, the organisation is entirely dependent on sponsorships, donations and a subsidy from the Department of Social Development (DSD). Among the welfare services it provides in Prieska is a free Basic Computer Classes to develop skills in the community (https://www.findglocal.com/ZA/Prieska/223939624479844/Empilisweni-Community-Development-Centre-Prieska).

The hydroponic project was successfully implemented in 2020. The project was supposed to be a sustainable solution to food insecurity in Prieska. The hydroponically grown vegetables were supposed to feed the local communities through Empilisweni's services, with extra production earmarked for sale to local communities to cover the cost of running and maintaining the technology. Notwithstanding its successful inauguration, the project failed to live up to its protential to address food insecurity in Prieska. According to the renewable energy company that funded it, the project failed to deliver the promise of food security in the community because of

lack of community support (Interview 1). The IPP company representative stated that community members were not willing to maintain and take care of the project because they wanted to be paid even though the project was being implemented to help solve food insecurity in the local community (Interview 1).

Figure 21: The hydroponic project during the first weeks of its implementation. Source: African Centre for a Green Economy, 2020.

An interview with one of the employees of Empilisweni revealed that the circumstances that led to the failure of the project were deeper than just the lack of community support. The lack of coordination between the funder, the technician, the community centre and the local community were identified as among the factors that led to the failure of the project (Interview 13). After the technician had installed the hydroponic project there was confusion about who was responsible for ensuring the sustainability of the enterprise. A hydroponic system is a delicate technology that requires consistent monitoring and maintenance to ensure that the equipment does not malfunction.

Figure 22: The hydroponic project in Prieska photographed during fieldwork (Svea Josephy, 2022).

Based on my interviews with community centre representatives, it is clear that discussions about who would be in charge once implementation was complete did not take place between the relevant stakeholders ahead of the initiation of the project. According to the community centre representative, the team dealing with implementation was expected to take care of paying for the electricity and water services used in the hydroponic project (Interview 13). However, this made no sense for the implementation team since the project was developed for the community and the community centre would be the beneficiary of the project. The community centre claims they did not receive any training on how to maintain the system and it was never officially handed over to them. Thus there was confusion about who was in charge of the project from the start. While local community members were employed during the implementation of the project and one member of the community was employed to maintain and run the project to ensure its sustainability, that person eventually left the project citing non-payment matters (Interview 13).

This story provides a multifaceted illustration of what is happening on the ground in socio-economic development projects in SLM. This explains that although projects are funded by IPPs, follow up and monitoring of projects remains a persistent challenge. Poor management and engagement among stakeholders tasked with the development of the hydroponic project in SLM

are the main factors that led to the failure of the project. To guarantee that socio-economic projects funded by climate finance investments in SLM are sustainable there is a need to ensure that all stakeholders share a common interest and are passionate enough to nurture and take care of projects for the well-being of local communities. Overall, the lack of collective interest from key stakeholders is identified as a grave impediment for achieving socio-economic development in SLM. If communities are serious about socio-economic development, they need to show support and willingness to participate in projects designed to address the challenges they are facing, instead of expecting quick fix solutions and immediate results. This would ensure that the just transition is achieved in SLM.

The following section discusses the interactions between key stakeholders in renewable energy development in SLM. It seeks to explore how the interactions between the key stakeholders negatively affect the success of climate finance investments in promoting a just transition in SLM through the elevation of socio-economic benefits.

7.3 Struggles at the interface: Contestations and conflicting views at the micro community level

The findings from this research indicate that the negotiations and engagements among key stakeholders are not effective enough to ensure that climate finance investments in the municipality achieve a just transition at the local level. According to Wlokas et al (2012) the lack of sufficient engagement between stakeholders makes it difficult to identify socio-economic priorities. As a result, it becomes difficult to design the structures required to ensure that socio-economic benefits are evenly delivered to local communities. In this research it was found that there is a lack of coordination between the key actors, especially local government and the IPP companies in SLM. This is despite claims made by the IPP companies interviewed for this research, who claimed that they held regular engagements with the local municipality to find out how they might assist in reaching the socio-economic development objectives of the local municipality. For instance, one of the IPP companies mentioned that

> the local government has been engaged as part of the company's stakeholder mapping exercise, which is used to identify key stakeholders and how the company is going to engage all the stakeholders (Interview 3).

Another renewable energy company representative mentioned that the Covid-19 pandemic made it difficult for the IPPs to engage and consult local government about the support they could offer to ensure that climate finance benefits accrued to the local communities (Interview 5).

Although companies operating in SLM do approach the municipality to ask how they can assist the municipality to reach its socio-economic development objectives, this is done mainly by the mining company (Orion Minerals), but not by the renewable energy companies (Interview 9). According to SLM, the IPPs have not adjusted their socio-economic commitments to be consistent with the local municipality's IDPs. This was confirmed during my interview with one of the IPP companies operating in SLM.

> Assisting the local government with local economic development is one of the major challenges we face because the priorities of the company and the local government are not the same (Interview 3).

The inconsistency between local government's IDPs and the annual economic development plans of IPPs can be attributed to the fact that the IPPs' socio-economic development plans are not required to be aligned with local government development strategies, and to an extent even to those of the other IPPs operating in the same area (Wlokas, 2022a).

Another issue diminishing the socio-economic contributions of renewable energy development in SLM is the lack of inclusion of local municipalities by the national government when it comes to REIPPPP policy development and formulation. My interviews with local government officials revealed that the local government was uncertain about REIPPPP processes and what steps they could take to ensure that communities benefited from climate finance investments (Interview 7). The local government is only included in renewable energy development once an IPP company approaches the municipality with the intention to implement a renewable energy project. The exclusion of local communities exposes the state's inadequate communication about the REIPPPP to local government structures. The issue of unstructured and limited interfaces between local government and provincial and national structures makes it more difficult for local government to effectively engage with IPP stakeholders (Wlokas, 2022a). This is because the local government is not confident about its precise role in the REIPPPP.

The lack of effective stakeholder engagement between the local government and the IPPs in SLM has the potential to disrupt the potential of climate finance investments to deliver a just transition at the local community level. Wlokas (2022a) contextualises the position of both local government and the IPPs with regard to stakeholder engagement at the local government level. She argues that the lack of engagement between these two stakeholders has

> surfaced tensions in the relationships between the local municipalities and IPPs, where officials lament the fact that IPPs do not consider the municipality's integrated development plans (IDPs) in their place-based investments. For their part, IPPs bemoan the lack of capacity at local government level to outline clear development priorities, as opposed to merely providing lists of development needs and infrastructure backlogs and fall back on their ultimate obligation of reporting to national government (Wlokas, 2022a, 84).

The tensions mentioned by Wlokas (2022a) between local government and IPPs proved to be evident in SLM. The local municipality accused the IPPs of being entirely focused on ensuring they tick the box in their socio-economic development commitments for their reporting to the IPP Office (Interview 7). Therefore, they did not pay much attention to the socio-economic challenges highlighted by the local municipality in its IDPs. The ineffective stakeholder engagement between the local municipality and the IPPs in SLM is further evident where IPPs did not consult the local municipality when setting up their community trusts nor did they inform the local government about which projects they were funding in SLM local communities and how much they were spending on each development intervention.

The absence of a common interest between the local government and the IPPs in SLM makes it difficult to ensure that the socio-economic impacts of renewable energy development are effectively distributed to the local communities. According to Wlokas (2022b) the communication gaps in REIPPPP are a result of the lack of effort to educate, mobilise, equip and organise communities and other stakeholders such the IPPs and local government for collective sense-making to respond to the opportunities and challenges arising from the REIPPPP. At present there is a reluctance from both local government and the IPPs to sit round the table and discuss the impacts of these new development interventions in local communities and how both stakeholders

might work hand in hand to ensure that climate finance investments in SLM contribute to local economic development (Interview 7).

On the other hand, other engagements between local communities and IPPs in SLM appear to be concrete and effective. However, it is important to note here that these engagements follow a top-down approach. All the engagements between IPPs and local communities are initiated by the IPP companies. Within SLM there is also a healthy relationship between IPP representatives, the community trust (Mulilo Prieska Solar Community Trust, which was the only community trust functioning at the time of my visit in SLM) and local communities including community organisations such as the local community centres, ECDCs and old age homes. The members of the community-based organisations and the IPP representatives in SLM knew each other on a personal level and they addressed each other on a first name basis. This healthy relationship between these different stakeholders was evident when I visited community organisations during fieldwork for this research.

The community-based organisations in SLM were appreciative of the support they received from IPPs. However, it is important to note here that the local organisations I visited acknowledged receiving support from only two IPPs. This can be attributed to the fact that the other two IPP companies had only just completed the construction of their renewable energy projects during my visit to SLM. When the involved stakeholders enjoy a productive relationship it becomes easy for IPPs to identify socio-economic priorities and to design the necessary structures to channel support so that communities benefit from renewable energy development. Although relationships between IPPs and local communities in SLM were on balance found to be healthy and effective, contact between the local business forum (which claimed to represent the People of Siyathemba Municipality) and the IPPs was non-existent according to the local business forum. A few municipal council members were also accused of establishing firms in order to benefit from tenders provided by the IPPs because of their high standing and power within SLM, this is according to allegations made during interviews with the local business forum. In conclusion, ineffective engagement and complex relationships among some stakeholders have the potential to hinder the distribution of socio-economic benefits of renewable energy development to communities in SLM.

The next section of this chapter discusses the socio-economic benefits of renewable energy development in SLM to explore whether climate finance investments have produced sustainable socio-economic opportunities that can promote a just transition in SLM.

7.4 The socio-economic contributions of climate finance investments in renewable energy in Siyathemba Local Municipality

In South Africa the climate finance investments in the REIPPPP aim to diversify the country's energy mix. In addition to this, climate finance investment is expected to contribute to the country's development objectives such as job creation, social upliftment and economic transformation by enabling broader economic ownership (IPP Office, 2021a). The purpose of these actions is to ensure that the transition in South Africa is just and fair and leaves no one behind. Bearing in mind that SLM is a municipality where a significant number of renewable energy projects are located and one that has received substantial investments for the development of renewable energy projects it is important to interrogate whether and how such investment has transformed the livelihoods of the local communities. At local government level climate finance investments should contribute to socio-economic development in order to advance a just transition, which is considered a fair and equitable process of moving towards a low carbon society (McCauley and Heffron, 2018).

On paper climate finance investments in renewable energy development have contributed immensely to socio-economic development initiatives in SLM. According to the IPP Office (2021b), 16.7% of the total provincial socio-economic benefits of climate finance in renewable energy development committed to socio-economic development in the Northern Cape has been invested in SLM, while 3.2% of the total provincial commitments to setting up community trusts has been committed to SLM. On paper these substantial financial investments can easily transform the lives of members of the local communities in SLM, therefore ensuring that climate finance investment in renewable energy development is consistent with South Africa's transition ambitions. However, in practice delivering the spin-offs of the REIPPPP such as job creation, SED, ED and the promotion of local ownership in local communities is a complex exercise that relies on effective coordination between various stakeholders (Wlokas, 2022a). This section critically explores the complex process of channelling contributions to socio-economic benefits by IPPs to local communities in SLM. This is done in order to determine whether the socio-economic

contribution of renewable energy development in SLM has managed to achieve the just transition at local municipal level.

The findings from this research indicate that IPP companies operating in SLM are contributing to socio-economic development activities in SLM. However, , it is still early to conclude that the socio-economic developments that are supported by the IPPs in SLM are sustainable or unsustainable at the moment. As that would require reviewing all the programmes supported by the IPPs in SLM, such as health interventions, support to ECDCs and local schools, university scholarships and other interventions. Currently, some of these socio-economic interventions in SLM are still at infancy stage and it requires a long period to monitor whether they are succcessful or not in contributing to long term sustainable jobs and economic opportunities for the local population. This issue will be discussed in detail later in this section. Important to note here is that most socio-economic contributions in SLM observed during fieldwork and those that were described by the IPPs are from two IPP companies already operating in SLM. This is understandable given that the other two renewable energy projects entered commercial operations in late 2021, just few months before the interviews for this research were conducted. It was therefore expected that their contributions would be limited to the construction phase. While my interviews and fieldwork were underway, one of these companies completed and published its comprehensive community needs assessment report for SLM, while the other was preparing to conduct an extensive community needs assessment before the end of 2022.

> We have only conducted a high-level needs assessment in Siyathemba Local Municipality, which was part of the bidding process. Since the project has entered commercialisation we are going to conduct an extensive community needs assessment in local communities to identify the socio-economic challenges and decide on which projects to prioritise when we are spending our SED and ED funding in the municipality (Interview 4).

The interviews conducted with local communities and IPPs indicate that jobs were created during the construction phase. The findings of this research indicate that most of the jobs created during construction included:

- Skilled personnel: These included engineers, supervisors, technicians and management positions.

- Semi-skilled personnel: These included drivers and equipment operators.

- Low-skilled personnel: These included security personnel and construction labourers.

Although jobs were created during the construction phase of renewable energy projects in SLM, it is important to note that many of the local people were employed as low-skilled personnel. This is because of the perceived disparity of skills and low levels of education within communities, meaning that most of those seeking work could only be employed as construction labourers or security guards. An interview with one of the IPP representatives acknowledged that it was difficult for the IPPs to create sustainable jobs for the local communities. The IPP representative stated:

> When talking about jobs created it is a bit tricky because most of the jobs that are created are created during the construction stage of the projects. Currently there are few people that are left in the plants that are responsible for ensuring the operation of the plants. Those are just between 5-10 in each renewable energy project that Mulilo Solar partially owns in Siyathemba Local Municipality (Interview 2).

From the interviews conducted with local community members and the IPPs operating in SLM it is evident that many of the jobs in renewable energy development are created during the construction phase. As stated, even though jobs are created, the local population only benefit from low-skilled and in some cases semi-skilled jobs created by the IPPs. These jobs pay less than what can be earned in skilled positions. These results are in line with those of a research done in Loeriesfontein, in the Northern Cape, by Malope (2022), which discovered that the wind farms under review did not provide jobs that fully met the standards for decent work promoted by the just transition. To address the issue of limited skills among the local population IPPs hire skilled people from other areas to fill in the gaps left by the local communities (Interview 3). Another issue with job creation in renewable energy development is that few jobs are generated during the project's operational life cycle and these jobs require skilled personnel. This was confirmed by the representative of one of the IPPs who acknowledged that when the project enters the commercial stage it can only create between five and ten job opportunities. Local residents are excluded from those positions because they lack the necessary skills and education (Interview 3). This was confirmed by one of the IPP company representatives in SLM.

> Currently the people working in the plants are mostly people coming from outside Siyathemba Local Municipality because most local people do not have the necessary skills to operate the plants. The people that are required to run the plants are skilled people in areas such as engineering and those skills are very scarce amongst the population of Siyathemba Local Municipality (Interview 1).

Although the IPPs commit to job creation for the local communities the long-term potential for job creation throughout the project's operational life cycle is somewhat limited (Baker and Wlokas, 2015). Thus, facilitating job creation in renewable energy development a complex situation. The only jobs that were found to be created for local residents in the project's operational life cycle were security jobs and some expected intermittent jobs such as cleaning solar panels, cleaning the sites and grass cutting in some cases. Apart from the jobs created in the construction and operation phase of the renewable energy projects in SLM, the IPPs are contributing to the creation of indirect jobs. For instance, two IPP companies stated that they were paying the salaries of workers employed in the ECDCs they are supporting in SLM (Interview 1 and 5).

Some jobs are created for a few community members within the IPP company structures and in the community trusts. These include jobs such as community liaison officers who are usually people employed from local communities. Although IPP representatives confirmed in their interviews with me that jobs had been created, none of them were able to provide statistics or figures during the course of our exchanges, nor during follow up questions despite several requests that I made.

In addition to generating employment for local communities, the IPPs together with the existing community trust in SLM are also contributing to supporting various socio-economic projects such as the installation of the hydroponic technology discussed previously. The results from this research found significant socio-economic benefits of climate finance investments in SLM for social and welfare purposes, such as donations of food to old age homes and community centres, provision of WiFi to schools and libraries, supporting sporting events across SLM and undertaking skills development programmes aimed at individuals and local businesses. For example, during my interviews with one of the renewable energy company representatives in SLM it was found

that the company was supporting the following socio-economic initiatives to the local community of Prieska:

- Supporting schools in Prieska by providing sanitary towels to young girls (educating our problem solvers of tomorrow).
- Supporting early childhood centres by providing stipends to staff and providing furnishings (medical purposes).
- Supporting back to school campaigns through the provision of stationery and school uniforms to learners identified either by the school or the Department of Social Development; providing air-conditioning to local schools.
- Supporting skills development training for youth (currently busy with employment readiness skills); training in information technology.
- Provision of support to the local health sectors.
- Providing support to local NPOs such as Hospice Moeder Terressa and Empilisweni YSC.
- Supporting the environment through planting trees or solar.
- Previous contributions included sports facilities such as a netball/tennis court at one of the schools and planting grass with water facilities (Interview 5).

It is important to note here that all the socio-economic activities that are listed above were provided to the local communities of Prieska, while Marydale and Niekerkshoop were excluded from the support offered as the IPP representative mentioned that their company only supported local communities within 60km radius of their project site (Interview 5). The interviews conducted with other IPP companies revealed that they too were supporting a number of socio-economic activities in SLM.

> There are quite a few projects that are supported by Mulilo Solar in communities around Prieska, Niekerkshoop and Marydale. Beside projects that the company supports

> throughout the year, the company also organises events during special days such Mandela Day, Christmas Day, June 16 etc to give back to the communities by offering gifts to the communities for instance food parcels and school uniforms to underprivileged people in communities around Siyathemba Local Municipality. The company has projects that it supports each month in communities around Siyathemba Local Municipality (Interview 1).

> At the moment there are two students that are supported by the company in Siyathemba Local Municipality and there were also two local businesses that were contracted by the company during the construction of the wind farm in accordance with the company's enterprise development commitment (Interview 4).

The social benefits of renewable energy development in SLM were affirmed by some of the local organisations visited during fieldwork. Interviews with local organisations revealed that the IPPs operating in SLM had made significant contributions. Although the organisations I interviewed were appreciative of the support they received from renewable energy companies in SLM, they mentioned that in some cases the support took too long to arrive despite agreements being signed. According to the organisations this was frustrating as they regularly required as much support as possible from the IPPs.

> Mulilo Solar, Sonnedix and Mulilo Solar Prieska Community Trust have made significant contributions to this organisation. They have assisted with the clothing for the elderly and provided uniforms for the old age home staff. During Christmas they also organise lunch for the elderly and give them presents. Mulilo Solar also bought a washing machine and a television for us. Currently we are waiting for Mulilo Solar Prieska Community Trust to renovate our kitchen (Interview 12).

> The renewable energy companies are supporting the community centre by donating food and other necessities that the centre requires (Interview 13).

The IPPs operating in SLM contribute by supporting local businesses as part of their ED commitments. All the IPP companies interviewed indicated that they were supporting local businesses in some way, but it was not clear in what form. Some IPPs mentioned that they supported local businesses by giving them contracts to supply goods and services during the

construction phase (Interview 3). During fieldwork I had an opportunity to visit a local accounting company that was funded by one of the IPP companies to assist SMEs with their financial statements, tax returns and other compliance issues in order to be eligible to submit tenders for government and renewable energy opportunities in SLM and surrounding municipalities (Interview 17).

During interviews with local accounting firm it was revealed that many SMEs in SLM were struggling to submit their compliance documents and this made it difficult for them to be considered for government tenders and business opportunities created by the development of renewable energy in SLM (Interview 17). In addition to the support that is provided to SMEs by the IPPs in SLM, the renewable energy development in the area has made an indirect contribution to the local economy. For example, during construction there was an influx of people from other areas who stayed in local guest houses and bought from local businesses (Interview 9). This was confirmed separately by the owners of the local guest house and the coffee shop in Prieska (Interview 14 and 15).

The findings from this research indicate that IPPs together with the community trust are contributing to socio-economic development in SLM. However, it remains difficult to make conclusions that these socio-economic interventions are sustainable or not, and will be able to contribute to long term socio-economic development of SLM. There is a need for more time to pass in order to understand and evaluate the impacts of the socio-economic benefits of the REIPPPP in SLM. For example, some of the socio-economic interventions are ongoing projects. But the case study which is discussed in Section One of this chapter provides an understanding that some of these projects have failed to live up to their expectations. On balance, it is evident that climate finance investments have contributed to socio-economic development in SLM. However, the socio-economic benefits are hardly visible on the ground. My fieldwork and research indicate that communities in Prieska, Marydale and Niekerkshoop continue to live in poverty while unemployment remains high and a significant number of residents are dependent on social grants.

These findings demonstrate that the climate finance investments in SLM have not really managed to promote a just transition as many residents continue to face unemployment and poverty, while some stakeholders are excluded in the transition, for example, the municipality and the local

business forum. Although the IPPs are contributing to socio-economic development in SLM, their socio-economic development contributions appear to be social and welfare driven. Based on the findings of my fieldwork and the research for this study there is insufficient support for long-term sustainable projects that can grow the local economy and create jobs for the local population. The only sustainable solutions that appear to be working include the investments in education and skills development programmes for the youth and local SMEs.

The REIPPPP promise of job creation can be directly linked with the post-apartheid promise of job creation in South Africa for vulnerable and marginalised communities across the country. This is the case with climate finance investments in renewable energy development in SLM, which also promises to create jobs for the local population and to grow the local economy. However, the interviews conducted with the local communities, local government, and IPPs indicate that the jobs that are generated are temporary and available only during the construction phase. Local communities expect a significant number of jobs to emerge through the development of renewable energy projects in their communities. However, only a limited number of jobs can be created meaning that not everyone can or will be employed (Interview 3). This has been disastrous for the IPPs in SLM, as they struggle to create enough jobs to satisfy local communities and achieve the commitments made during the bidding process of the REIPPPP.

As things stand in SLM the jobs created in the renewable energy development are unsustainable and only a certain number of local people can be employed. The findings from this research are consistent with the findings of the study by Ghosh et al (2022). That study found that local people were not satisfied by the number of jobs created by renewable energy development because of the temporary nature of the jobs, which were limited to the construction phase of the renewable energy projects. It is evident from my fieldwork and research that the development of renewable energy does not have the capacity to create sustainable and decent jobs for local communities. This research argues that the development of renewable energy projects in SLM has not delivered a just transition because the development of the projects creates temporary, low paying jobs for a population that lacks the skills necessary for employment in the construction and operation phases of renewable energy projects. This is where the injustice in South African renewable energy development lies. The challenges associated with the creation of temporary and unsustainable

socio-economic opportunities through renewable energy development are reiterated by Marais and Westoby (2022).

> We were made aware of a range of current conflicts associated with SED and ED, where it was felt that the local community did not benefit adequately from the wind and solar projects going up in their backyard. The interviewees raised the issue of creating long-term benefits, as job creation during the construction phase had been only of short-term benefit (Marais and Westoby, 2022, 174).

In addition to being unable to create long-term sustainable job opportunities for the local population, the IPPs operating in SLM faced an outcry from the business forum, which claims to represent local SMEs and The People of Siyathemba Municipality. The business forum accused the IPPs of giving tenders to companies from outside the municipality. There is also criticism made against the local municipal officials who are regarded by the local business forum as their direct competition when it comes to tendering for opportunities for the local SMEs (Interview 10). Local government officials are accused of setting up companies with the intention of benefiting from the business opportunities that are created by the renewable energy development in SLM (Interview 10). Notably these accusations were not verified as they were dismissed as false and untrue by the local government officials interviewed for this study (Interview 8). It also proved difficult to obtain any substantial evidence regarding such accusations. However, such issues have been raised by the local business forum and local community forum in SLM, and the allegations are documented in the media (see Appendix 2).

In conclusion, the socio-economic development approach being undertaken by IPPs in SLM "appear[s] to come from a short term, disengaged, aid mentality of development, instead of the embedded and community-driven approach advocated by development practitioners" (Morar, 2019, 61). From the findings of this study, it is apparent that climate finance investments in renewable energy development in SLM are trickling down to local communities through socio-economic development initiatives supported and funded by the IPPs. However, the socio-economic benefits have not appreciably advanced a just transition, which aims to ensure that everyone benefits and participates in the transition. Some of the local people have not benefited from jobs generated by the IPPs, while local SMEs feel excluded from the business opportunities created by

the renewable energy development in SLM. However, the establishment of the community trusts promises to create a long lasting legacy of the REIPPPP in SLM. If managed well the local ownership element of the community trusts will be able to deliver on the just transition promises by supporting long-term socio-economic development initiatives (Khan et al, 2021) aimed at empowering the local population and growing the local economy.

The next section of this chapter discusses the challenges associated with reporting and monitoring the socio-economic benefits that are created by the investments in renewable energy development in SLM. The lack of effective reporting and monitoring makes it difficult to determine whether the climate finance investments in renewable energy have actually contributed to the promotion of a just transition at the local community level.

7.5 Challenges with reporting and monitoring in South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

The IPP Office in South Africa is mandated with reporting on the socio-economic contributions made by the IPPs in the local communities where they operate (IPP Office, 2021a). On paper the reports published by the IPP Office depict high levels of success. The reporting by the IPP Office shows that significant budgets have been set aside by IPPs for the SED and ED commitments of local communities (IPP Office, 2021a). However, during fieldwork in SLM the contribution of the IPPs to socio-economic development of local communities was hardly visible on the ground. The fieldwork and research for this study revealed that the people of SLM continue to be confronted by high unemployment, poverty and inequality, while many residents in the municipality are still dependent on social grants. This disparity between the reporting of success by the IPP Office and the reality of poverty and struggles on the ground indicates that the reporting on the socio-economic benefits in local communities does not paint a clear picture of what is happening on the ground in local communities located close to IPP projects.

IPP Office reports are informed by IPP company reports that are submitted to the IPP Office and the DoE. The IPPs are required to submit quarterly reports to the IPP Office and the DoE on their expenditure on SED and ED projects, in accordance with the commitments and annual developmental plans made by the IPPs during the bidding process (Wlokas, 2022a). On reporting on the contributions of the REIPPPP in South Africa's socio-economic development the IPP Office

has been lauded for its good work. For instance, Morar (2019) drawing from the IPP Office 2016 report states that:

> The IPP Office has done well to track high-level indicators such as money spent on procurement, construction and operations, the amount of finance that is and will become available to communities, and the percentages of ownership and employment categorised into South Africans, black South Africans, women, and local communities (IPP Office, 2016 in Morar, 2019, 61).

Although the IPP Office has played a significant role in compiling and sharing the SED and ED contributions made by the IPPs in local communities, it remains unclear whether the IPP Office has taken any steps to verify and confirm the information that is contained in IPP company quarterly reports. To understand reporting processes, questions were sent to the IPP Office to determine how they were monitoring IPP reporting and whether they were going into the field to verify if indeed renewable energy projects were contributing to socio-economic development in local communities, especially in rural and remote communities where there are few economic activities. After requesting more information about the processes of reporting and monitoring the socio-economic contributions to local communities, no tangible response was received from the IPP Office. The IPP Office insisted that:

> The Economic Development commitments are regulated through the Implementation Agreement (IA) that is signed between the Department of Mineral Resources and Energy and the IPPs. The IPP Office is mandated by the Department of Mineral Resources and Energy to undertake the contract management, compliance monitoring and monitoring and evaluation of all IPP projects that have signed such Implementation Agreements with the department. The IPP Office monitors the reporting by successful bidders of performance against their obligations during construction and during commercial operations (Interview 6).

This response from the IPP Office makes it clear that there is no monitoring of the SED and ED initiatives in local communities. These findings confirm that IPP Office reports are entirely dependent on reports submitted to them by the IPPs. The lack of effective monitoring as to whether socio-economic development opportunities are delivered as claimed makes it difficult to determine

the extent to which climate finance investments in renewable energy development have substantively contributed to uplifting the local communities. As argued in this research many of the socio-economic contributions from IPPs are for social and welfare purposes. However, in the IPP Office reporting socio-economic benefits in SLM are not categorised (IPP Office, 2021b) thus making it difficult to differentiate between socio-economic development initiatives that could have a long-term impact on the communities in order to ensure that the most vulnerable and remote communities benefit from South Africa's REIPPPP.

During data collection for this research the quarterly reports submitted by the IPPs to the IPP Office and the DoE were requested from the IPP Office without success. The failure of the IPP Office and the DoE to make such reports publicly available to be studied and scrutinised raises questions about the reporting and transparency of the REIPPPP. The reporting and monitoring of the socio-economic contributions by IPPs in local communities remains a complicated issue, because the IPP Office reports highlight significant socio-economic contributions by the REIPPPP in local communities while the reported benefits are hardly visible in local communities (IPP Office 2021a and 2021b). As shown in this research local communities in SLM continue to experience poverty and unemployment despite the re-industrialisation of the municipality through the development of renewable energy projects. Clear reporting and monitoring in the REIPPPP remains a challenge even for the IPPs as there is no clear communication by the IPP Office and the DoE with regard to how implementation of SED and ED are monitored (Wlokas, 2022b).

From the findings of this research, it is apparent that the monitoring of SED and ED needs to be improved as the IPP Office reports do not paint a clear picture of what is happening in local communities, but instead provide high-level reporting based on the amount that is spent on SED and ED and the number of jobs created for communities. Instead of high-level reporting, the IPP Office when monitoring socio-economic development programmes should focus on understanding the effectiveness of the initiatives being supported by the IPPs. There should also be a focus on reporting and monitoring the finances that are vested in community trusts (WWF and Green Cape, 2015).

The next section of this chapter discusses the relationship between the development of renewable energy and land in SLM. Land is a critical element in the development of renewable energy in

South Africa. In order for the bid of the IPP company to be considered in the REIPPP the company has to show that it has secured land rights either through purchase or a long-term lease agreement.

7.6 The relationship between renewable energy development and land in Siyathemba Local Municipality.

SLM is endowed with an environment that is conducive to renewable energy development. The municipality has vast tracts of open land some of which is used for livestock farming. However, the emergence of renewable energy development in SLM is threatening the extensive livestock farming in the area. As in other parts of the Karoo, space and place in SLM are being redefined by extensive investments in the exploitation of the municipality's significant energy resources (Walker, 2019). As in other districts in the Karoo region, climate finance investment in SLM is reshaping the landscape of the municipality (Walker, 2019). The vast majority of the land in SLM is privately owned by white farmers. This is the legacy of colonialism and apartheid in South Africa. The white owned, family farms that are privately owned have previously been the primary source of employment for most of the population in SLM. However, with renewable energy development creeping in, most farmers are opting to rent out some portions of their farms to IPP companies for the development of renewable energy projects.

The rollout of renewable energy projects in SLM means that farmers who previously depended on farming activities have an opportunity to cash in by leasing their land to renewable energy companies. These changes pose a significant risk to farmworkers because as farmers begin to profit from leasing their land to renewable energy companies their interest in farming might decline. My fieldwork and interviews with various stakeholders revealed that changes are already being observed in SLM. These changes were confirmed through observation of the study area. Across SLM are visible abandoned and deserted farmhouses, confirming that the landscape is indeed changing. The interviews conducted in SLM suggest there is an influx of people moving from farms to towns such as Prieska in search of employment as farming activities decline (Interview 7). However, this research found no evidence that this movement is linked to the development of renewable energy in the area.

In South Africa a bidder in the REIPPPP can only submit a bid once land rights have been secured and the bidder is able to provide evidence of the lease agreement and proof of land acquisition

(DoE in McEwan, 2017; Eberhard and Naude, 2017). This demonstrates the importance of the connection between land and renewable energy interventions. Academic research examining renewable energy transitions has revealed instances of social injustice where renewable energy development projects displace local communities who are marginalised and often underrepresented (Cotula et al, 2011; Grain, 2013). However, the fieldwork and research conducted for this study found no cases of displacement in SLM. All the renewable energy projects studied in this research had secured land rights through leasing land from commercial farmers. In some cases, the land that is being rented by the IPPs was previously used for grazing.

This study found that local communities did not suffer direct injustice through being land secured for renewable energy project development. However, renewable energy projects constructed on private land will benefit only the farm owners. This was confirmed by the local government officials. The local government official I interviewed stated that "the farmers that are renting out their land to the solar companies are the ones that are making money out of renewable energy development in Siyathemba Local Municipality" (Interview 7). The local government official further argued that that is where the red tape lies in the development of renewable energy projects (Interview 7). The local municipality does not have any say about the lease agreements made between farm owners and IPPs. The development of renewable energy projects on private farms has been found to threaten the livelihoods of farmworkers. If more farmers offer to rent their land to renewable energy developers farming activities are likely to decline, thus negatively impacting farmworkers. This argument concurs with the study conducted in India by Ghosh et al (2022), which found that lease agreements between renewable energy developers and farm owners only benefited farmers while inappropriately affecting labourers employed on farms.

7.7 Conclusion

This chapter has provided a contextual background to the complicated story of renewable energy development in SLM in order to interrogate whether the idea of a just transition through renewable energy investments has been achieved. The chapter began by discussing the story of one of the renewable energy development projects supported by IPPs in SLM. This story provides background on how engagements between various stakeholders involved in renewable energy development in SLM have the potential to lead to the failure or a success of socio-economic development intervention. The second section of this chapter has discussed the engagements and

negotiations between various stakeholders to determine how their interactions impact the socio-economic development component of the REIPPPP in SLM. The third section discussed the socio-economic contributions of climate finance investments in SLM. The unsustainability of the socio-economic initiatives is discussed and its potential to result in the failure to attain a just transition is also discussed. The fourth section discussed the IPP Office's inadequate monitoring and reporting on socio-economic development initiatives. The final section concludes by critically discussing the relationship between land and renewable energy development in SLM.

CHAPTER EIGHT: CONCLUSION

8.1 Introduction

This study's objective was to determine the extent to which climate finance investments in SLM's renewable energy development has been successful in fostering a just transition for the communities of Prieska, Marydale, Nierkerkshoop and Copperton. There is at present little information available about the impact that such investments are having in the local communities where the IPPs operate. This study aimed to close this research gap by adopting a case study approach to explore whether renewable energy development in SLM has advanced a just transition for the local population in terms of socio-economic contributions as promised by South Africa's REIPPPP.

The study's results showed that large investments in climate finance had been made for the development of renewable energy in SLM, but the local people in the municipality continue to struggle with issues of unemployment, poverty and inequality. Some of the participants in the research have stated that the obstacles undermining the efficient distribution of climate funding in SLM is a lack of skills and capacity at the municipal level. Notwithstanding the investments that are being mobilised for renewable energy development in SLM, the justice issues in the transition have not been addressed: electricity prices remain high, while power cuts are experienced by people across the municipality. This study has argued that socio-economic development has not been delivered through climate finance investments for renewable energy development in SLM.

Through this study, it is my hope that it will contribute to social change by outlining how climate finance investments in renewable energy development in small towns such as Prieska, Marydale,

Niekerkshoop and Copperton can potentially contribute to the alleviation of poverty and create much-needed job opportunities for the local population if used effectively. Skills and capacity are some of the key hindrances that need to be addressed in order for climate finance investments to be effective in paving the way for a just transition in vulnerable and marginalised local communities.

This study seeks to add, in a modest way, to the growing body of literature in South Africa that evaluates and examines the role played by the REIPPPP in the country's goals for a just transition.

Several studies have been conducted on the effects of investments in renewable energy, particularly in the REIPPPP in South Africa. However, these studies have mostly focused on the employment aspects, socio-economic development contributions and engagements between various stakeholders without exploring whether the socio-economic development contributions promised by South Africa's decarbonisation ambitions and the mobilisation of climate finance in renewable energy development have advanced the just transition at the local level. In South Africa the national government purports that the investments in renewable energy development should promote justice by ensuring equitable distribution of climate finance investments across gender, class and race at the local community level.

As a renewable energy development programme that aims to decarbonise South Africa's energy sector, which is currently dominated by coal, the REIPPPP also aims to ensure that the local communities located in close vicinity to the renewable energy projects benefit in terms of socio-economic development from the IPPs. This is made explicit in the REIPPPP procurement policy, where bids from IPPs are scored based on pricing and socio-economic development criteria. The scoring for pricing is 70%, while 30% is scored based on socio-economic development criteria including local job creation, participation of local communities (specifically historically disadvantaged individuals), protection of local content, local manufacturing, community involvement and ownership, skills development of the local population and rural development (Baker, 2015). However, this study argues that the REIPPPP is failing to achieve these promises of development in local communities across Prieska, Marydale, Niekerkshoop and Copperton where five IPPs operate. The disappointments of the REIPPP programme failing to meet the desires of the just transition in SLM are discussed and outlined in this study.

The findings of this study indicate that although the REIPPPP has a robust socio-economic and spatial development component, the climate finance investment made in renewable energy development has hardly managed to achieve a just transition in SLM. The findings from the study indicate that IPPs have invested in socio-economic development of communities where their operations are located. However, the investments are clearly inadequate as shown by the prevalence of poverty and unemployment in SLM. There findings also revealed that there is poor implementation of the socio-economic development initiatives on the ground as evidenced by some of the failed projects such as the hydroponic programme which is discussed in Chapter Seven of this research. This study found various explanations for the ineffectiveness of climate finance investment into renewable energy development to achieve a just transition in SLM. The findings of this study are briefly reviewed below, followed by an attempt to design a just pathway framework on how climate finance investments in the REIPPPP can advance and promote a just transition in local communities where the operations of the IPPs are located.

8.2 Re-industrialisation of Siyathemba Local Municipality through climate finance investments in renewable energy development

This study has found that significant climate finance investments have been mobilised in SLM to support South Africa's decarbonisation through paving the way for the development of renewable energy. Since the REIPPPP was launched in South Africa in 2011, more than R10 billion has been invested in SLM by various stakeholders, according to the reports produced by the IPP Office. Since the REIPPPP was launched, five renewable energy projects including three Solar PV plants and two wind farms have been constructed in SLM. This signifies that SLM is being re-industrialised through renewable energy development. However, despite the visible re-industrialisation of SLM through renewable energy development the urgency of a just transition at the local community level in SLM is still not realised.

The fieldwork and research from this study has revealed that despite some socio-economic contributions by IPPs in SLM communities, people on the ground remain starving and unemployed, while the majority of the local population is still dependent on social grants for their survival. In order to ensure that climate finance investments in renewable energy development makes a contribution to socio-economic upliftment in South Africa's rural and remote municipalities there is a need for robust engagements between the various stakeholders involved.

However, small municipalities such as SLM do not have capacity to tap into the opportunities presented by the just transition, while issues of corruption and power struggles remain persistent at the municipal council. During my fieldwork in SLM there was a political breakdown within the council among the coalition parties governing the municipality. Such incidents signal that SLM is a municipality in crisis, thus making it difficult for the municipality to optimise on this new "re-industrialisation" that is taking place in the municipality.

8.3 Key stakeholders in renewable energy development in Siyathemba Local Municipality

The key stakeholders in renewable energy development in SLM have been mapped in this research. To successfully disperse climate finance investments at the local municipality level and achieve a just transition through socio-economic development, several stakeholders are concerned with the socio-economic component of renewable energy development in SLM. The role of these key stakeholders is critical for ensuring that the socio-economic development component of South Africa's REIPPPP is achieved by improving the lives of the local populations where renewable energy development projects are located. Any disjuncture between these various stakeholders has the potential to delay or disrupt the benefits of climate finance investments in renewable energy development.

In this study it was found that the engagement and coordination among stakeholders involved in renewable energy development projects is somewhat limited, and there is room for improvement. However, that would require building robust collaborative relationships across the entire landscape. Positive relationships between the industry (represented by the IPPs), local communities (including local organisations, community trusts and local populations), and the government (the IPP Office, local government and various government departments involved in South Africa's decarbonisation ambitions) are critical in order to ensure that the REIPPPP achieves the promises of a just transition in vulnerable and marginalised communities (Wlokas et al, 2017).

8.4 Lack of coordination between the stakeholders involved in renewable energy development in Siyathemba Local Municipality

As mentioned in the previous section, strong coordination and relationships between the various stakeholders involved in the REIPPPP are critical for ensuring the success of the programme. However, this study has found that the role between the stakeholders involved in renewable energy

development in SLM is not coherent or strong enough to ensure that socio-economic development is delivered in the communities of Prieska, Marydale, Niekerkshoop and Copperton. This was noticeable in interactions reported between the local government, the local business forum (which claims to represent local businesses based in SLM) and the IPPs operating in SLM. In this research this was found to be one of the key hindrances to effective distribution of climate finance investments on the ground. In order for climate finance to trickle down to vulnerable and marginalised communities the ambitions and policies of the local government and the IPPs must be in sync. However, my findings revealed that as part of the REIPPPP procurement policy the IPPs are not required to align their socio-economic contributions with the IDP of the local government where they operate. This can prove to be difficult when it comes to achieving the promise of development since these two stakeholders (IPPs and local government) that are tasked with the development of local communities are not working towards achieving common goals in their objectives and planning.

8.5 Unsustainable development at the local community level and perceived lack of skills among the local communities

The findings from this research indicate that "some" climate finance invested in renewable energy development in SLM is flowing to local communities in the form of socio-economic contributions by the IPPs. However, the initiatives supported by the IPPs do not have sustainable goals. For instance, most of the initiatives that were mentioned by the IPPs as part of their contribution to SLM appear to be welfare and social driven without offering any long-term opportunities for the local communities. Even though this appears to be the case on the ground the companies were however supporting education in local communities. In this research I argue that only the support offered for educational purposes in towns such as Prieska, Marydale, Niekerkshoop and Copperton appeared to offer long-term solutions to the socio-economic challenges facing these aforementioned small towns. The findings from this research confirmed that there is significant climate finance that has gone towards supporting educational programmes such as contributing to paying salaries of educators hired at the local ECDCs, providing support to local high and primary schools by providing uniforms to needy children, funding WiFi services, desks, books and other learning equipment. However, based on interviews conducted with IPP representatives, their support appears to be concentrated in Prieska, thus not paying much attention to needy and marginalised towns such as Marydale and Niekerkshoop. Unsustainable development creates

inequality, which often leads to injustices and a transition that does not address the needs of the local population related to poverty, unemployment and inequality. This is something that was found to be happening in SLM.

On the other hand, the IPPs interviewed in this study indicated the lack of skills among the local population as one of the factors resulting in IPPs hiring people from outside SLM. Although this was disputed by the local business forum and community forum, a shortage of skills is a real challenge across the local municipality. Based on my interviews with local government officials, and the research discussed above, low levels of education are pervasive within the local population of SLM. This might be one of the factors that is inhibiting the local population from participating fully in renewable energy development in their local municipality. According to the findings of this research the local SMEs also lack the capacity and skills in order to fully benefit from the tendering opportunities that are brought in by the development of renewable energy projects in SLM. As things stand there is a need for skills development and capacity building across the entire municipality. This would ensure that the local population and SMEs fully benefit and participate in climate finance investments made into renewable energy development in SLM.

8.6 The injustices of the just transition in Siyathemba Local Municipality

This research has argued that the development of renewable energy projects in SLM has hardly contributed to creating the promised just transition in SLM. This is because the development of the renewable energy projects creates temporary poorly paid jobs as a result of the local population lacking the skills required in the construction and operation of renewable energy projects. Furthermore, local businesses feel excluded from the opportunities that are provided by the IPPs operating in SLM. In terms of achieving justice in the just transition no one should be left behind. However, the findings of this study indicate that there still exists exclusion in climate finance investments in renewable energy development in SLM. This exclusion is visible from aspects such as the local population being excluded from high paying and skilled job opportunities created by the development of renewable energy because of a perceived lack of skills. On the other hand, the development of renewable energy projects in SLM has not addressed the high price of electricity, which is making it difficult for the local population to purchase electricity. Despite the evidence of climate finance flows in renewable energy development in SLM, the local people are still

starving and confronted by high unemployment, while a large percentage of the population in Prieska, Marydale and Niekerkshoop remains dependent on social grants.

8.7 Monitoring and reporting on the socio-economic development in Siyathemba Local Municipality

The IPP Office is a key stakeholder in South Africa's renewable energy development. However, the IPP Office's involvement with what is happening on the ground in terms of monitoring and reporting on the socio-economic contributions of the IPPs is somewhat limited. In this study monitoring of the socio-economic contributions by the IPPs was found to be a key challenge facing both the IPPs stakeholders and the IPP Office. Without a doubt the IPPs in SLM are contributing to socio-economic development with the hope of improving the livelihoods of the local communities. However, monitoring of projects that are funded by the IPP is a challenge. This is demonstrated by the case study in Section 1 of Chapter Seven. The findings from this research indicate that there is a disparity between the reporting in the REIPPPP in terms of socio-economic contributions in SLM, while on the ground there is a reality of continuing struggles relating to poverty and unemployment in the communities of Prieska, Marydale and Niekerkshoop. The argument presented in this research is that the reporting by the IPP Office does not demonstrate a clear picture of what is presently happening in terms of socio-economic development in small towns where the renewable energy projects are located.

8.8 Renewable energy development and the issues of land in Siyathemba Local Municipality

Like some districts in the broader western Karoo region, the climate finance investment in SLM is reshaping the landscape of the municipality (Walker, 2019). Much of the land in SLM is privately owned by white farmers. This is the legacy of colonialism and apartheid in South Africa. The white owned, family farms, which are privately owned, have previously been the main source of employment for the majority of the population in SLM. However, with the renewable energy development creeping in, most farmers are opting to rent out portions of their farms to IPP companies for renewable energy development. If the issue of the relationship between land and renewable development is not given direct attention it has the potential to promote injustice in South Africa's just transition ambitions. This has already been experienced in some countries where vulnerable and marginalised communities have been displaced to accommodate renewable

energy development. These injustices of renewable energy development experienced in other countries are discussed in Chapter Two. In the case of this research no injustices were found to have occurred as a result of renewable energy development in SLM. However, my findings indicate that renewable energy development in SLM is mostly benefiting the owners of private farms across the municipality, while farmworkers do not benefit from the leasing arrangements made by farmers in SLM. At the same time the local municipality is of the view that it does not benefit as it is supposed to from the renewable energy development in their local communities since the IPPs engage the farmers directly when they want to lease land.

8.9 A just future?

The just transition is well underway in South Africa. However, at present there are still various impediments in order to ensure that the local communities fully benefit and participate in South Africa's just transition efforts. South Africa as a country is faced by critical challenges of corruption which are apparent from the national government level to local government structures. While at the same time the local municipalities are facing human capacity, competency and skills challenges which result to poor performance at the local government level. In order to ensure that climate finance is effectively distributed at the local government level to improve the socio-economic status of the local population there is a need for uprooting corruption at the local municipality level and create strong measures that will boost the quality of life of local population, encourage economic activity and investment at the local government.

Effective and corrupt free local municipalities can be able to effectively cooperate with the IPPs in order to ensure that the climate finance investments at the local government level are utilised for the benefit of the local communities. The other impediment to achieving a just future in South Africa is that the REIPPPP is not designed in a manner that can address the local community energy challenges such as expensive electricity and constant blackouts (load-shedding). The current design of the REIPPPP aims to promote the national government agenda of decarbonisation, this is prevalent from the fact that the IPPs are obligated to supply the national grid without considering the marginalised and vulnerable communities where they operate which are faced by issues of energy poverty.

The just transition is an issue that needs immediate attention, but it is clear from the findings of this research that more work has to be done at the local municipality level to guarantee that the local population benefit from climate finance investments in renewable energy. Right now, it seems that conversations and discussions regarding a just transition in South Africa are organised in a top-down approach, with neither the discussions nor the policies of the transition take into account the actual situation in local communities where IPPs operate (for instance low levels of education and lack of skills which deters the local population from effectively benefiting and participating in the opportunities presented by the just transition). Local governments, for example, such as SLM, are not included in just transition plans and decisions, even though they are required to host renewable energy projects. The fact that the local municipalities are under-capacitated is one of the significant problems hampering the just transition at the local level. Municipalities such as SLM lack the requisite human resources to collaborate and coordinate with IPPs in a way that would ensure that the transition's advantages reach the poor and marginalised groups on the ground.

The IPPs have also not demonstrated any commitments to developing long-term sustainable skills development programmes that will guarantee that the local communities are fully equipped with the necessary skills to participate in the just transition. Vulnerable and marginalized communities, such as those in Prieska, Marydale, Nierkerkshoop, and Copperton, are unlikely to see any positive or fruitful results from the just transition. If conditions do not change or improve, these communities will continue to benefit from welfare and top-down driven social support, which does not empower nor skill the population to effectively benefit from the climate finance investments in renewable energy development. Despite these challenges mentioned above, there is still an opportunity for ensuring that the local communities benefit from South Africa's just transition efforts. However, that would require a rigorous effort from all the relevant stakeholders that are involved in the just transition. For South Africa to achieve a just transition at the local government level the following key measures will need to be implemented.

Improve engagement and coordination between the key stakeholders

One of the primary impediments to achieving a just transition at the local community level through climate finance investments in renewable energy development identified in this research is the

poor coordination and cooperation among the various stakeholders involved in renewable energy development in SLM. At present the socio-economic contributions provided by the IPPs in SLM follow a top-down approach, which is deeply rooted in a handout type of development that puts the focus on welfare and socially driven support. This does not empower local communities, instead it creates dependency. Therefore, there is a need for extensive roundtable engagements among stakeholders such as community organisations, IPPs and the local government. Such engagements would facilitate effective communication channels, which would ensure that every stakeholder contributes to how the finance that is set aside for SED and ED in local communities should be spent and managed. At present the local government stakeholder feels excluded from planning in relation to how and where the IPPs operating in SLM should be spending their money that is set aside for socio-economic development in local communities. Furthermore, the local business forum feels that local businesses are sidelined from the opportunities provided by renewable energy development.

Skill and capacitate local population and local government officials

One of the critical obstacles that is constraining local communities from effectively participating in climate finance and a just transition in SLM is the lack of skills and capacity. For example, the local population is excluded from skilled employment opportunities that are created by the construction of renewable energy projects in their municipality because of their lack of skills and low levels of education. As a result, skilled labour is often brought in from outside SLM. Capacitating the local communities and the local government with skills is critical for ensuring that the benefits of the just transition are effectively distributed at the local municipality level. At present IPPs do support educational and skills development programmes in SLM. However, this is not enough to ensure that communities will benefit from the opportunities created by the just transition. The IPPs have a contract of 20 years with Eskom, so the focus should be on encouraging high and primary school learners to take up subjects such as science and mathematics, which will align them with careers associated with the operational and maintenance needs of the renewable energy projects located in SLM over the long run.

Improve monitoring and reporting on the socio-economic contributions of the REIPPPP

This research has shown how monitoring and reporting on the success of the REIPPPP programme in its socio-economic contributions in SLM is not a true reflection of what is happening on the ground. Despite the 2021 report by the IPP Office indicating that significant financial support has been disbursed by IPPs in their socio-economic development initiatives in SLM, poverty, unemployment and SASSA grants dependency remain pervasive. Based on the findings of this research there is a need for monitoring and reporting on the socio-economic contributions by the IPPs to be improved. Instead of reporting solely on socio-economic development and employment created by the IPPs, the IPP Office should reflect on what kind of socio-economic development initiatives have been supported by the IPPs and what kind of development projects the funds have been invested in. This would enhance understanding about the success or failure of the REIPPPP on its socio-economic promises. At present the climate finance investments appear to be directed towards social and welfare driven projects, which do not have long-term sustainable objectives.

Create effective working relationships between the local municipalities and the IPPs

To ensure that the climate finance investments contribute to sustainable socio-economic development initiatives at the local municipality level the socio-economic obligations of the IPPs should be aligned with the IDPs of the local municipality. At present there is a disjuncture between the objectives of the local government and the IPPs, and this is not doing justice to the local communities in terms of addressing the socio-economic challenges they face. For the socio-economic component of the REIPPPP to be effective in promoting a just transition at the local level the IPPs should adopt the IDPs of local municipalities and gain an understanding of the most pressing needs of local communities in order to be able to design effective solutions. If this is adopted the IPPs would be able to provide resources where they are most needed, thus making climate finance distribution at the local level effective in empowering local communities.

REFERENCES

Adams, W.C. (2015). Conducting Semi-Structured Interviews. In: Wholey, J. S., Harty, H. P. and Newcomer, K. E. (Eds). *Handbook of Practical Program Evaluation*. Jossey-Bass, San Francisco.

Aiyub, A., Novitayani, S. and Marthoenis, M. (2020). *Challenges of Data Collection for Research in a Developing Country. "Bridging The Gaps: Linking Evidence to Practice in Nursing and Health Sciences"*, The first Aceh International Nursing Conference, Banda Aceh, October 24-26, 2018. Proceedings of the Aceh International Nursing Conference (AINC), pp. 164-169. Universitas Syiah Kuala. Available Online: https://www.researchgate.net/publication/340428569_Challenges_of_Data_Collection_for_Research_in_a_Developing_Country (Accessed 08 July 2022).

Akinlabi, S., Mashinini, P. M., Mbohwa, C. and Adedeji, P. A., Lewandja, M. M. A., Samuel, O., F., Akinlabi, E. T. (2019). *Evaluating Impacts of Coal Mining in South African environment: A step to actualizing society 4.0*. Proceedings of the International Conference on Industrial Engineering and Operations Management, Toronto, Canada.

Anantharajah, K. and Setyowati, A. B. (2022). Beyond promises: Realities of climate finance justice and energy transitions in Asia and the Pacific. *Energy Research & Social Science*, 89. pp.1-11.

Arifin, S. R. (2018). Ethical Considerations in Qualitative Study. *International Journal of Care Scholars*, 1(2). pp. 30-33.

Astalin, P, K. (2013). Qualitative research designs: A conceptual framework. *International Journal of Social Science & Interdisciplinary Research*, 2(1). pp. 118-124.

Atkinson, D and Kotze, H. (2017). *Socio economic assessment of SKA Phase 1 in South Africa*. Prepared as part of the Strategic Environmental Assessment (SEA) for Phase 1 of the Square Kilometre Array (SKA) radio telescope, South Africa. Available Online: https://www.sarao.ac.za/wp-content/uploads/2019/03/SocioEconomic-Assessment.pdf (Accessed 17 May 2022).

Atkinson, D. (2007). *The Arid Areas Report Volume 1: District Socio-economic Profile and Development Plans*. Centre for Development Support, University of the Free State.

Atmadja, S. S., Liswanti, N., Tamara, A., Lestari, H. and Djoudi, H. (2020). Leveraging climate finance for gender equality and poverty reduction: A comparative study. Report. Center for International Forestry Research (CIFOR), Bogor, Indonesia.

Ayamolowo, O. J., Manditereza, P. T. and Kusakana, K. (2022). South Africa power reforms: The Path to a dominant renewable energy-sourced grid. *Energy Reports*, 8. pp. 1208-1215.

Baker, L. and Wlokas, H. L. (2015). *South Africa's renewable energy procurement: A new frontier?* Energy Research Centre, Cape Town, University of Cape Town.

Baker, L. (2014). Renewable energy in South Africa's minerals-energy complex: A 'low carbon' transition? *Review of African Political Economy*, 42(144). pp. 245-261.

Baker, L. (2015). The evolving role of finance in South Africa's renewable energy sector. *Geoforum*, 64. pp. 146-156.

Baker, S. H. (2020). Fighting for a Just Transition. *NACLA – Report on the Americas*, 52(2). pp. 144-151.

Bloem, S., Swilling, M. and Koranteng, K. (2021). Taking energy democracy to the streets: Socio-technical learning, institutional dynamism, and integration in South African community energy projects. *Energy Research and Social Science*, 72. pp. 1-14.

Bouzarovski, S. and Simcock, N. (2017). Spatializing energy justice. *Energy Policy*, 107. pp. 640-648.

Brinkmann, S. (2018). The interview. In: Denzin N. K. and Lincoln, Y. S. (Eds). *The SAGE handbook of qualitative research* (5th edition). Thousand Oaks, CA, Sage.

Burnham, M., Radel, M. Z. and Laudati, A. (2013). Extending a Geographic Lens Towards Climate Justice, Part 2: Climate Action. *Geography Compass*, 7(3). pp. 228-238.

Capellán-Pérez, I., de Castro, C. and Arto, I. (2017). Assessing vulnerabilities and limits in the transition to renewable energies: Land requirements under 100% solar energy scenarios. *Renewable & Sustainable Energy Reviews*, 77. pp. 760-782.

Cassim, A., Radmore, J. V., Dinhom, N. and McCallum, S. (2021). *South African Climate Finance Landscape 2020.* Cape Town, Green Cape and The Bertha Centre, Cape Town.

Chikulo, B. C. (2014). Gender, Climate Change and Energy in South Africa: A Review. *Gender and Behaviour*, 12(3). pp. 5957-5970.

Chinigò, D and Walker, C. (2020). Science, astronomy, and sacrifice zones: development trade-offs, and the Square Kilometre Array (SKA) radio telescope project in South Africa. *Social Dynamics*, 46 (3), pp. 391-413.

Ciesielska, M., Boström, K. W. and Öhlander, M. (2018). Observation Methods. In: Ciesielska, M. and Jemielniak, D. (Eds). *Qualitative Methodologies in Organization Studies: Volume 2 Methods and Possibilities*. Teesside University, United Kingdom, Palgave, Macmillan.

Clapp, C., Ellis, J., Benn, J. and Corfee-Morlot, J. (2012). *Tracking Climate Finance: What and How?* Climate Change Expert Group Paper No.1. France, OECD Publishing.

Climate Investment Funds. (2020). *Supporting just transitions in South Africa: Just transition case study*. Climate Investment Funds. Available Online: https://www.cif.org/sites/cif_enc/files/knowledgedocuments/supporting_just_transitions_in_south_africa.pdf. (Accessed 11 March 2022).

Climate Investments Funds. (2019). *Estimating the social and economic development impacts of climate investments: Initial findings from CIF's clean technology fund*. Available Online: ctf_social_and_economic_development_impacts_of_climate_investments.pdf (cif.org) (Accessed 23 March 2022).

Climate Justice Charter Movement. (n.d.). Climate Justice Charter. Available Online: https://cjcm.org.za/ (Accessed 14 June 2022).

Climate Policy Initiative. (2020). *Updated View of the Global Landscape of Climate Finance 2019*. London, Climate Policy Initiative.

COBENEFITS. (2019). *Economic prosperity for marginalised communities through renewable energy in South Africa: Assessing the co-benefits of decarbonising the power sector*. The Institute for Advanced Sustainability Studies (IASS) and Council for Scientific and Industrial Research (CSIR), South Africa.

Colenbrander, S., Dodman, D. and Mitlin, D. (2018). Using climate finance to advance climate justice: The politics and practice of channeling resources to the local level. *Climate Policy*, 18 (7). pp. 1-22.

Cotula, L., Finnegan, L. and Macqueen, D. (2011). *Biomass energy: Another driver of land acquisitions?* International Institute for Environment and Development (IIED), London, United Kingdom.

Crabtree, S. M. (2019) Reflecting on reflexivity in development studies research. *Development in Practice*, 29 (7). pp. 927-935.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A. and Sheikh, A. (2011). The case study approach. *Medical Research Methodology*, 11(100). pp. 1-9.

Dane, A. and Mabaso, M. (2022). Socio-economic impacts of renewable energy deployment on marginalised communities in South Africa. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*. Centre for Sustainability Transitions, Stellenbosch University.

McCauley, D., Heffron, R., Pavlenko, M., Rehner, R. and Holmese, R. (2016). Energy justice in the Arctic: Implications for energy infrastructural development in the Arctic. *Energy Research & Social Science*, 16. pp. 141-146.

Davies, M. and Wlokas, H. (2022). A guidebook to the REIPPPP: Introduction. In: Davies, M. Wlokas, H. Callaghan, N and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*. Centre for Sustainability Transitions, Stellenbosch University.

Davies, M. (2022). Towards just transitions? Emerging insights from the REIPPPP. In: Davies, M. Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*, Centre for Sustainability Transitions, Stellenbosch University.

Denzin, N. K. and Lincoln, Y. S. (2018). Introduction: The discipline and practice of qualitative research. In: N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (5th edition). Thousand Oaks, CA, Sage.

Eberhard, A. and Kåberger, T. (2015). Renewable energy auctions in South Africa outshine feed-in tariffs. *Energy Science and Engineering*, 4(3). pp. 190-193.

Eberhard, A. and Naude, R. (2017). The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned & Proposals to Reduce Transaction Costs. Graduate School of Business, University of Cape Town.

Enel Green Power. 2021. Garob Wind Farm ready for commercial operation. Enel Green Press Release, 4 December 2021. Available Online: https://www.enelgreenpower.com/media/press/2021/12/garob-wind-farm-ready-commercial-operation (Accessed 23 May 2022).

Eskom. (2021). *Transmission Generation Connection Capacity Assessment of the 2023 Transmission Network (GCCA-2023)*. Eskom Transmission Division, Johannesburg, South Africa.

Forman, A. (2017). Energy justice at the end of the wire: Enacting community energy and equity in Wales. *Energy Policy*, 107. pp. 649- 657.

Francis, D. and Webster, E. (2019). Inequality in South Africa. *Development Southern Africa*, 36 (6). pp. 733-734.

Funder, M., Wlokas, H., Jhetam, T. and Olsen, K. H. (2021). Corporate community engagement professionals in the renewable energy industry: Dilemmas and agency at the frontline of South Africa's energy transition. *Energy Research & Social Science*, 81. pp. 1-9.

Gentles, S. J., Charles, C., Ploeg, J. and McKibbon, K. (2015). Sampling in Qualitative Research: Insights from an Overview of the Methods Literature. *The Qualitative Report*, 20(11). pp. 1772-1789.

Ghosh, D., Bryant, G. and Pillai, P. (2022). Who wins and who loses from renewable energy transition? Large-scale solar, land, and livelihood in Karnataka, India. *Globalizations*, DOI: 10.1080/14747731.2022.2038404. Available Online: https://www.tandfonline.com/action/showCitFormats?doi=10.1080%2F14747731.2022.2038404&area=0000000000000001.

Gill, P., Stewart, K., Treasure, E. and Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, 204(6). pp. 291-295.

Global Africa Network. (2019). Northern Cape economic potential and investment opportunities summary. May 2, 2019. Global Africa Network. Available Online: https://www.globalafricanetwork.com/company-news/northern-cape-economic-potential-and-investment-opportunities-summary/#:~:text=To%20realise%20the%20socio-economic%20priorities%20of%20the%20Northern,5%20tourism%206%20knowledge%20economy%207%20energy%20sector. (Accessed 20 July 2022).

Grain. (2013). *Land grabbing for biofuels must stop: EU biofuel policies are displacing communities and starving the planet*. Barcelona, Spain, Grain.

Gutiérrez, M. and Gutiérrez, G. (2019). Climate Finance: Perspectives on Climate Finance from the Bottom Up. *Development*, 62. pp. 136-146.

Hammarberg, K., Kirkman, M. and de Lacey, S. (2016). Qualitative research methods: When to use them and how to judge them. *Human Reproduction*, 31(3). pp. 498-501.

Hancock, B., Windridge K. and Ockleford, E. (2007) An Introduction to Qualitative Research. The NIHR RDS EM / YH. Available Online: https://www.rds-yh.nihr.ac.uk/wpcontent/uploads/2013/05/5_Introduction-to-qualitative-research-2009.pdf. (Accessed 20 March 2021).

Heap, R. 2018. Eskom finally signs 27 controversial PPAs. Tamarindo Group, 9 April 2018. Available Online: https://www.awordaboutwind.com/analysis/eskom-finally-signs-27-controversial-ppas (Accessed 24 February 2022).

Heffron, R. J. and McCauley, D. (2014). Achieving sustainable supply chains through energy justice. *Applied Energy*, 123. pp. 435-437.

Heffron, R. J. and McCauley, D. (2018). What is the 'Just Transition'? *Geoforum*, 88, pp. 74-77.

Hong, H. G., Karolyi, G. A. and Scheinkman, J. (2020). Climate finance. *The Review of Financial Studies*, 33(3). pp. 1011-1023.

Independent Power Producer Office. (2021a). *Independent Power Producers Procurement Programme (IPPPP): An Overview.* Centurion, South Africa. Available Online: https://www.ipp-projects.co.za/Publications (Accessed 05 April 2022).

Independent Power Producer Office. (2021b). *REIPPPP focus on Northern Cape Provincial Report Volume 1*. Centurion, South Africa, IPP Office. Available Online: https://www.ipp-projects.co.za/Publications: Accessed: 05 April 2022.

Islam, S. N. and Winkel, J. (2017). *Climate Change and Social Inequality*. DESA Working Paper No. 152. United Nations, Department of Economic & Social Affairs. Available Online: https://www.un.org/esa/desa/papers/2017/wp152_2017.pdf (Accessed 20 March 2021).

Jackson, R., Drummond, D. K. and Camara, S. (2007) What Is Qualitative Research? *Qualitative Research Reports in Communication*, 8(1). pp. 21-28.

Jenkins K., McCauley, D. A., Heffron, R., Stephan, H. and Rehner, R. (2016). Energy Justice: A Conceptual Review. *Energy Research and Social Science*, 11. pp. 174-182.

Jenkins, K. (2018). Setting energy justice apart from the crowd: Lessons from environmental and climate justice. *Energy Research and Social Science*, 39. pp. 117-121.

Jnanathapaswi, S. G. (2021). *Thematic Analysis & Coding: An Overview of the Qualitative Paradigm*. New Delhi, APH Publishing Corporation.

Khan, Z., Theobald, S., Kruger, G., Montalto, P. A., Gelb, S., Sithole, T., Maponyane, L. and Nkomotje, E. (2021). *Communities in Transition: Funded by The Role of Community Ownership in South Africa's REIPPP Programme*. Technical Report, Johannesburg, Intellidex (Pty) Ltd.

Kiragu, E., Adeleke, F. and Murondo, T. (2016). *Empowering Communities through Renewable Energy Investment Research report on the South African Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) in facilitating economic development in local*

communities. Johannesburg, South Africa, Mandela Institute, University of the Witwatersrand and Konrad-Adenauer-Stiftung.

Knowledge Pele. (2022). *Copperton Wind Farm Socio-Economic Needs & Assets Assessment*. Sandton, Gauteng, Knowledge Pele. Available Online: https://coppertonwindfarm.co.za/images/Copperton%20Wind%20Farm%20SENA%20Final%20Report%202022.2%20docx.pdf (Accessed 6 July 2022).

Komali, Y., Day, R. and Golubchikov, O. (2016). Spatial justice and the land politics of renewables: Dispossessing vulnerable communities through solar energy mega-projects. *Geoforum*, 76. pp. 90-99.

Korsgren, P. and Mollema, N. (2021). *Climate Finance and Just Transition: Case Study the Netherlands*. Action Aid Discussion Paper. Available Online: https://actionaid.nl/wp-content/uploads/2021/03/ActionAid_ClimateFinanceRapport-low-res.pdf (Accessed 30 March 2021).

Kwadamah, F. and Brobbery, P. (2016). *Challenges of data collection process: A review of existing literature*. Available Online: https://gafm.org/ForgiveAFAarticleGAFM.pdf (Accessed 20 May 2022).

Lager, F., Adams, K. M., Dzebo, A., Eriksson, M., Klein, R. J. T. and Klimes, M. (2021). *A Just Transition for Climate Change Adaptation: Towards Just Resilience and Security in a Globalising World*. Adaptation Without Borders Policy Brief 2, Stockholm Environment Institute.

Ledwaba, P. F. (2014). Tiger's eye in the Northern Cape Province – potential for employment creation and poverty alleviation. *The Journal of the Southern African Institute of Mining and Metallurgy*, 114. pp. 881-885.

Lee, J. and Byrne, J. (2019). Expanding the Conceptual and Analytical Basis of Energy Justice: Beyond the Three-Tenet Framework. *Frontiers in Energy Research*, 7(99). pp. 1-10.

Leigland, J. and Eberhard, A. (2018). Localisation barriers to trade: The case of South Africa's renewable energy independent power program. *Development Southern Africa*, 35(4). pp. 569-588.

Lo, K. (2021). Authoritarian environmentalism, just transition, and the tension between environmental protection and social justice in China's forestry reform. *Forest Policy and Economics*, 131. pp. 1-9.

Lupton, D. (Ed.). (2020). *Doing fieldwork in a pandemic* (crowd-sourced document). Available Online: https://docs.google.com/document/d/1clGjGABB2h2qbduTgfqribHmog9B6P0NvMgVuiHZCl8/edit?ts=5e88ae0a#v (Accessed 20 May 2022).

Ma, G. and Oluwabunmi, O. O. (2019). A 'qualitative' analysis of critics on qualitative research in management. *Management Today*, 9(2), pp. 129-135.

Majundar, A. (2019). Thematic Analysis in Qualitative Research. In: Gupta, M., Shaheen, M. and Reddy, K. (Eds). *Qualitative Techniques for Workplace Data Analysis.* USA, IGI Global.

Malope, B, J. (2022). *Power Struggles: An exploration of the contribution of renewable energy to sustainable development, decent work, and the just transition through a case study of wind farm development outside Loeriesfontein, Northern Cape*. PhD Thesis, University of Stellenbosch.

Marais, L. and Westoby, P. (2022). A Corolla or a Porsche? The case of renewables in local economic development in De Aar. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*., Stellenbosch University, Centre for Sustainability Transitions.

McCauley, D. and Heffron, R. J. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, pp. 1-7.

McDonald, D. A. (2007). Growing Pains: The Latest Phase of the Environmental Justice Movement in South Africa. *Ecología Política*, 32. pp. 115-116.

McEwan, C. (2017). Spatial processes and politics of renewable energy transition: Land, zones and frictions in South Africa. *Political Geography*, 56. pp. 1-12.

Milena, Z. R., Daionora, G. and Alin, S. (2008). Qualitative Research Methods: A Comparison between Focus Group and In-depth Interview. *Economics Science Series*, 17(4). pp. 1279-1283.

Miller, J. 2016. Nersa Should Take Eskom to Task Over Illegal Refusal to Sign PPAs. Polity, 11 November 2016. Available Online: https://www.polity.org.za/print-version/nersa-should-take-eskom-to-task-over-illegal-refusal-to-sign-ppas-2016-11-11 (Accessed 23 July 2022).

Mohai, P., Pellow, D. and Roberts, J. T. (2009). Environmental Justice. *Annual Review of Environmental Resources*, 34. pp. 405-430.

Mohojan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, 7(1). pp. 23-48.

Montmasson-Clair, G. (2021). *A policy toolbox for just transitions*. Working Paper, Trade & Industrial Policy Strategies (TIPS), Pretoria, South Africa.

Morar, J. (2019). *The Development Impact of the Renewable Energy Independent Power Producer Procurement Programme on South Africa's Small Towns*. Master's dissertation. Stellenbosch University, South Africa.

Mulilo Prieska Solar Community Trust. (2022). Community Trust Development Programme. Available Online: https://www.mulilopriesKatrust.org.za/_files/ugd/086a09_32e3bdb87a7448529cb2cee4d81afe60.pdf (Accessed 23 May 2022).

Mundaca, L., Busch, H. and Schwer, S. (2018). 'Successful' low-carbon energy transitions at the community level? An energy justice perspective. *Applied Energy*, 218. pp. 292-303.

Najma, M. (2019). *Sustainability Transitions in South Africa*. Abingdon, Oxon, Routledge Studies in Sustainability.

Nakhooda, S. (2019). *The effectiveness of international climate finance*. Working Paper 371. London, United Kingdom, Overseas Development Institute.

National Planning Commission. (2019). *2050 Vision and Pathways for a Just Transition to a low carbon, climate resilient economy and society*. Social Partner Dialogue for a Just Transition May 2018 to June2019. Department of Planning, Monitoring and Evaluation, Republic of South Africa.

Nelwamondo, T. (2016). *History of successes and challenges of SA: Community trust*. SAWEA / SAPVIA roundtables. Industrial Development Corporation, Johannesburg, South Africa.

Njie, B. and Asimiran, S. (2014). Case Study as a Choice in Qualitative Methodology. *Journal of Research & Method in Education*, 4(3). pp. 35-40.

Njobeni, S. 2017. Minister's Eskom support worries IPP. IOL, 26 January 2017. Available Online: https://www.iol.co.za/business-report/energy/ministers-eskom-support-worries-ipp-7509562 (Accessed 24 February 2022).

Nkoana, E. M. (2018). Community acceptance challenges of renewable energy transition: A tale of two solar parks in Limpopo, South Africa. *Journal of Energy in Southern Africa*, 29(1). pp. 34-40.

Nyawo, B. (2019). *A viability study of independent power producers in the South African electricity supply market: A case study of the Northern Cape Province*. Master's dissertation, Department of Mechanical Engineering, University of Cape Town, South Africa.

Okkonen, L. and Lehtonen, O. (2016). Socio-economic impacts of community wind power projects in Northern Scotland. *Renewable Energy*, 85. pp. 826-833.

Orb, A., Eisenhauer, L. A. and Wynaden, D. (2001). Ethics in Qualitative Research. *Journal of Nursing Scholarship*, 33(1). pp. 93-96.

Ormarjee, L. 2021. Green developers look to other provinces as N Cape's power grid runs out of capacity. News 24, 27 August 2021. Available Online: https://www.news24.com/fin24/Economy/green-developers-look-to-other-provinces-as-n-capes-power-grid-runs-out-of-capacity-20210827 (Accessed 27 July 2022).

Oxfam. (2013). *'You can't eat electricity': Why tackling inequality and hunger should be at the heart of low carbon development in South Africa*. Oxfam Discussion Papers. Oxfam GB, United Kingdom.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N. and Hoagwood, K. (2013). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration Policy Mental Health*, 42(5). pp. 533- 544.

Patel, Z. (2009). Environmental justice in South Africa: Tools and trade-offs. *Social Dynamics*, 35(1). pp. 94 -110.

Presidential Climate Commission. (2022). *A Framework for a Just Transition in South Africa*. Presidential Climate Commission Report, Pretoria, South Africa.

Rasmeni, S., Chetty, D., Sebola, P. and Seripe, K. (2016). Tiger's eye in the Northern Cape Province, South Africa – grading, distribution, small-scale mining, and beneficiation potential. *The Journal of the Southern African Institute of Mining and Metallurgy*, 116. pp. 587-592.

RES4Africa Foundation. (2020). *A Just Energy Transition in South Africa Socio-economic needs and the positive impacts of a future low-carbon economy*. RES4Africa, Italy.

Ruppel, O. C. and Luedemann, C. (2013). *Climate Finance: Mobilising Private Sector Finance for Mitigation and Adaptation*. Institute for Security Studies, South Africa.

Ryan, F., Coughlan, M. and Cronin, P. (2009). Interviewing in qualitative research: The one-one interview. *International Journal of Therapy and Rehabilitation*, 16(6). pp. 309-3014.

Scheidel, A. and Sorman, A. S. (2012). Energy transitions and the global land rush: Ultimate drivers and persistent consequences. *Global Environmental Change*, 22. pp. 588-595.

Scott, D. and Oelofse, C. (2005). Social and Environmental Justice in South African Cities: Including 'Invisible Stakeholders' in Environmental Assessment Procedures. *Journal of Environmental Planning and Management*, 48(3). pp. 445-467.

Simcock, N. (2016). Procedural justice and the implementation of community wind energy projects: A case study from South Yorkshire, UK. *Land Use Policy*, 59. pp. 467-477.

Siyathemba Local Municipality. (2022). Integrated Development Plan (IDP) – Draft 3 (Resolution No: 06/06/2022/2.3). Siyathemba Local Municipality, Northern Cape, South Africa.

Smith, S. (2017). *Just Transition: A Report for the OECD*. OECD publishing

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104. pp. 333-339.

Soanes, M., Rai, N., Steele, P., Shakya, C. and Macgregor, J. (2017). *Delivering real change: Getting international climate finance to the local level*. IIED Working Paper, IIED, London.

Sovacool, B. K., Burke, M., Baker, L., Kumar, C., Kotikalapudi, C. K. and Wlokas, H. (2017). New frontiers and conceptual frameworks for energy justice. *Energy Policy*, 105. pp. 677-691.

Starman, A. B. (2013). The case study as a type of qualitative research. *Journal of Contemporary Educational Studies*, 1. pp. 28-43.

Statistics South Africa. (2011). 2011 Census. Available Online: https://www.statssa.gov.za/?page_id=993&id=siyathemba-municipality (Accessed 28 January 2022).

Statistics South Africa. (2018). *General Household Survey*. South Africa, Pretoria.

Statistics South Africa. (2022). *Quarterly employment statistics (QES*). Statistics South Africa, Pretoria.

Surl, H. (2011). Purposeful Sampling in Qualitative Research Synthesis. *Qualitative Research Journal*, 11(2). pp. 63-75.

Swilling, M., Davies, M. and Wlokas, H. (2022). Introduction. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*. Centre for Sustainability Transitions, Stellenbosch University.

Swilling, M., Musango, J. and Wakeford, J. (2015). Developmental States and Sustainability Transitions: Prospects of a Just Transition in South Africa. *Journal of Environmental Policy & Planning*, 5(5). pp. 1-23.

Swilling, M., Musango, J. and Wakeford, J. (2016). Developmental States and Sustainability Transitions: Prospects of a Just Transition in South Africa. *Journal of Environmental Policy & Planning*, 18(5). pp. 650-672.

The Congress of South African Trade Unions. (2022). *Just Transition Blueprint for Workers.* Summary Document. COSATU House Braamfontein, Johannesburg. Available Online: http://mediadon.co.za/wp-content/uploads/2022/03/Cosatu-JT-Blueprint-Summary-Document.pdf (Accessed 23 May 2022).

United Nations. (2020). *World Social Report 2020 Inequality in a Rapidly Changing World*. United Nations Publication. Available Online: https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-FullReport.pdf (Accessed 22 March 2021).

Velicu, I. and Barca, S. (2020). The Just Transition and its work of inequality. *Sustainability: Science, Practice and Policy*, 16(1). pp. 263-273.

Walker, C. (2019). Cosmopolitan Karoo: Land, Space and Place in the Shadow of the Square Kilometre Array. *Journal of Southern African Studies*, 45(4). pp. 641-662.

Wang, X. and Lo, K. (2021). Just transition: A conceptual review. *Energy Research & Social Science*, 82. pp. 1-11.

Westphal, M. I., Canfin, P., Ballesteros, A. and Morgan, J. (2015). *Getting to $100 Billion: Climate Finance Scenarios and Projections to 2020*. Working Paper. World Resources Institute, Washington DC.

Winkler, B., Lemke, S., Ritter, J. and Lewandowski, I. (2017). Integrated assessment of renewable energy potential: Approach and application in rural South Africa. *Environmental Innovation and Societal Transitions*, 24. pp.17-31.

Winkler, J., Tyler, E., Keen, S. and Marquard, A. (2021). Just transition transaction in South Africa: An innovative way to finance accelerated phase out of coal and fund social justice. *Journal of Sustainable Finance & Investment.* https://doi.org/10.1080/20430795.2021.1972678. Available Online: https://www.tandfonline.com/doi/abs/10.1080/20430795.2021.1972678?journalCode=tsfi20.

Wlokas, H. and Jhetam, T. (2022). Building relational capacity for the energy transition: Learning from REIPPPP experimentation. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*. Centre for Sustainability Transitions, Stellenbosch University.

Wlokas, H. (2016). *Roundtable conversation series – economic development in REIPPPP: Collaboration for scale and impact*. Roundtable Report. Available Online: https://sawea.org.za/wp-content/uploads/2016/09/Report_3rd-Roundtable-report_Collaboration_26-August-2016.pdf (Accessed 03 August 2022).

Wlokas, H., Boyd, A. and Andolfi, M. (2012). Challenges for local community development in private sector-led renewable energy projects in South Africa: An evolving approach. *Journal of Energy in Southern Africa*, 23(4). pp. 46-61.

Wlokas, H., Westoby, P. and Soul, S. (2017). Learning from the literature on community development for the implementation of community renewables in South Africa. *Journal of Energy in Southern Africa*, 28(1). pp. 35-44.

Wlokas, H. (2022a). Institutional practices in community benefit delivery in the REIPPPP. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme*. Centre for Sustainability Transitions, Stellenbosch University.

Wlokas, H. (2022b). Reflections on the role of academic research. In: Davies, M., Wlokas, H., Callaghan, N. and Swilling, M. *South Africa's contested transition to energy democracy? A collection of insights emerging from the national large-scale renewable energy programme.* Centre for Sustainability Transitions, Stellenbosch University.

World Bank. (2018). *Overcoming Poverty and Inequality in South Africa: An Assessment of Drivers, Constraints and Opportunities*. World Bank Publications, Washington.

World Wide Fund for Nature and Green Cape. (2015). *Improving socio-economic development and enterprise development under the Renewable Energy Independent Power Procurement Programme*. Proceedings from a WWF-SA and GreenCape Workshop, Johannesburg, South Africa. Available Online: http://awsassets.wwf.org.za/downloads/memo___sed_ed_workshop.pdf (Accessed 20 September 2022).

World Wide Fund for Nature. (2015). *A review of the local community development requirements in South Africa's renewable energy*. World Wide Fund for Nature, Switzerland.

Ye, Y. 2022. China's Solar Projects Raise Land Grabbing Concerns: Farmers in Xingtang County claim a new energy company bulldozed their land and livelihoods to make way for solar panels. Sixth Tone, 17 June 2022. Available Online: https://www.sixthtone.com/news/1010576/chinas-solar-projects-raise-land-grabbing-concerns?source=channel_home (Accessed 28 July 2022).

Zadek, S. (2019). Financing a Just Transition. *Organization & Environment*, 32(1). pp. 18-25.

Ziervogel, G., New, M., Archer van Garderen, E., Midgley, G., Taylor, A., Hamann, R. and Warburton, M. (2014). Climate change impacts and adaptation in South Africa. *Wiley Interdisciplinary Reviews: Climate Change*, 5(5). pp. 605-620.

APPENDICES

Appendix 1: Memorandum of Demand sent by the People of Siyathemba to Companies operating in Siyathemba Local Municipality

The Department of Energy under the Renewable Energy Independent Power Producer Procurement Program ensures that bidders make an extensive contribution to Economic Development. Particularly Job creation, Enterprise Development, and Socio-Economic Development.

The People of Siyathemba has however noted with great disappointment that selected bidders and their contractors ignore these and is of the view that such does not apply during the contraction phase of the energy plants. They ignore the fact that the greatest opportunity to impact the local economy and to make a significant contribution to the transformation of the local people's lives is during the construction phase. We have learned by experience that our people continue to be exploited during this period and once the construction is completed, is our people we left with unemployment and our local economy goes down faster than a crashing airplane. If the context of local must be legally challenged, make NO mistake, we are ready to do such.

We know the national excuse that people in these remote and underdeveloped areas are unskilled, and our businesses do not have the capacity to provide the needed services. The exploitation of our people leads to continuous payment disputes and the new trend is contractors explaining such as meeting the minimum demands and is therefore legally covered. Many of the subcontractors completely ignore many of the prescribes of the labour law and seem to have completely turned our own Community Liaison Officers against the very people they have been appointed to serve.

Systemic inequalities and unfair discrimination remain deeply embedded in social structures, practices, and attitudes, undermining the aspirations of our constitutional democracy. The denial of access to opportunities, including access to services and contractual opportunities for rendering services for consideration, and continues to be an area that all IPPs fail to show any reasonable steps to accommodate the local people as mandated by the laws on equity. They also have no preferential policies to accommodate women and disabled people.

We are hereby given notice of the community's grievances including the workers, small businesses, and the vulnerable members in our community, the women and disable people.

The community hereby make the following demands of your organisation:

1. That an immediate assessment be made into all employees at all contractors and sub-contracts to determine how many of the local people are employed in these and their designated positions. In this regard we demand

1.1. that a minimum of 50% of employment opportunities be made available to the local Siyathemba people.

2. That an immediate assessment is made into all sub-contracts awarded over the duration of the construction period to determine how many of the local small and medium businesses have been giving an opportunity to render service. In this regard we demand

2.1. that a minimum of 30% of all contracts be awarded to local businesses through strategic venturing and partnership;

2.2. an end to the selective and exclusive using of a handful of local businesses in the awarding of tenders. Radical economic transformation is linked to equal redistribution of wealth and we can ill afford to continue the project of enriching only a handful of black, calling such economic transformation;

2.3. reasonable steps in ensuring access to opportunities for local businesses.
3. Community Liaison Officers have become tools by which contractors have exploited and misappropriated the role of these officers. They are sitting on sites playing the role of shop stewards behind laptops forgetting they are not serving the workers but the community. There is also no coordination between these various offices. In this regard we demand
3.1. that all liaison officer of constructors and sub-contractors be located within the community and render service in all respect to the community;
3.2. the community has noted the discriminating and unfair hiring practices in place. Certain people get more opportunities while others are not even afforded a single opportunity for employment or rendering of services. An immediate coordination programme between Community Liaison Officers particularly with regards to employment and the appointment of local businesses must be established;
3.3. We have a few disabled people who are still able to play a significant role in our economy. These people are, however, intentionally ignored and their value is being undermined. NO reasonable opportunity is created for their participation. The community demands that all disabled people be accommodated with immediate effect;
3.4. We further demand the use of the registered local business chambers and support for their local enterprise employment and business databases.
4. We demand that all constructors and sub-contractors move away from the minimum wage approach in their employment practices. It is a disgrace for contractors to defend and justify their slavery mentality with them meeting minimum demands. Any contractors with such a mentality must be blacklisted in our municipality and prevented from being allowed to tender for services. In this regard we demand
4.1. that the organisation makes a determination into all rates being paid on these contracts. The community wants to know all the constructors who are opting to pay their employees at the bare minimum rates;
4.2. Those currently paying our people at a bare minimum and using the mismanagement of funds by previous companies as an excuse must be held to account. Our people have not misappropriated funds or made agreements at any bargaining council for rates. We demand an immediate adjustment of the rate in this regard.
5. All contractors and subcontractors have an obligation to abide by the prescribes of all labour-related laws. We demand that all sub-contractors immediately adjust their operations to meet the requirements of the labour law. We know of many sub-contractors that do not even provide proper contracts and payslips. In this regard we demand
5.1. all contractors ensure that they provide payslip advice for the full duration for which people were employed. Sub-contractors must pay for UIF and payslips must indicate such. We will not allow for a situation that our people struggle to get what is due to them by the end of these projects;
5.2. all contractors must abide by the labour law and where they have NOT abided immediately ensure that they compensate those they have robbed in the process. The law is clear and non-negotiable. In this regard we demand
5.2.1. When workers are called to work on a Sunday, they will be paid 1.5* rate p/hour and on a public holiday 2* rate p/hour. Any contractor who did not pay workers accordingly will be held accountable and maximum punishment must be demanded from these crooks;

5.2.2. Contractors must abide by the minimum working hour per week. Our people are working up to 13 hours per day and more than 48 hours a week without additional compensation. We demand an immediate end to this or just compensation under agreed terms.
6. Contractors on the projects have turned to insourcing services particularly in the transport sector. They have either insourced the staff transport or tender such services to their external preferred provider. This is an easy and reasonable means to accommodate economic transformation and should be utilised to achieve such. In this regard we demand
6.1. an immediate end of such and that all sub-contractors act according to the aspirations of our constitutional democracy and open this and other transformative services for local business.
7. It has been and remains a common practice for contractors and their sub-contractors to promote the idea of centralising their core business activities around the previously white, privileged areas. The black and previously disadvantage areas are only good to host the hundreds of previously disadvantaged blacks from outside our municipality and these companies are willing to pay our people to vacate their homes to accommodate their workers. Similarly, will they ensure that NO white person from outside is accommodated in a previously disadvantaged area. That is the context of our people's interaction in their view of social-economic transformation. In this regard we demand
7.1. that sub-contractors move their core business such as offices into our previously disadvantaged areas and help to create a more inclusive local economy with a greater impact on the lives of the previously disadvantaged;
7.2. that their businesses together with the local business chambers strategically analyse and implement a plan to open opportunities of inclusion to transform the local economy over the construction period particularly of the previously disadvantaged and in previously disadvantaged areas.
8. We are aware that NONE of the contractors or sub-contractors have committed to a social plan or contribute toward the advancement of the people of Siyathemba. Our region and the opportunities that has come about is only another vehicle for self-enrichment. In this regard we demand
8.1 That all contractors commit to a social upliftment plan and contribute to the social regeneration of our people.
9. Any further and/or alternative relief that would contribute to the advancement of our community during the construction of these windfarms.
We hereby give notice and demand a response on the above within SEVEN working days.
Convener:…… On behalf of …….
…… ……..
Date:…… Date:……..
Place:…… Place:……..
Witness 1:…….. Witness 1:…….
Date:…… Date:……
IN SUPPORT OF THE MEMORANDUM OF DEMANDS BY THE PEOPLE OF SIYATHEMBA MUNICIPALITY
I the undersigned, hereby put my signatory in support of the demands listed in the memorandum handed over to the IPP Contractors. I commit to the advancement of my own and the community through the beneficiation of the construction process and the realization of these commands.

Appendix 2: Media article about the standoff between the Local Business Forum and Orion Mineral

Mining 'mafia' wants a piece of Prieska copper-zinc project in Northern Cape

Ciaran Ryan. Posted in Journalism

Available Online: http://www.writersroom.co.za/mining-mafia-wants-a-piece-of-prieska-copper-zinc-project-in-northern-cape/

Not a chance, says project owner Orion Minerals.

It started with the construction sector, and has now moved into mining. The so-called construction "mafia" appears to have jumped the fence to mining, renewable energy, in fact anything that can turn a quick buck.

The Prieska copper-zinc project in the Northern Cape is the latest to get a visit from a so-called local "business forum" eager to negotiate its way into the proposed mine's spending budget.

Earlier this month the mine's lawyers approached the Northern Cape High Court for an urgent interdict after members of a forum purporting to represent the community, some of them wielding semi-automatic rifles, held protests across Prieska and outside the mine gate.

"We've taken a firm stance against those involved in stirring up the local community to disrupt our plans to restart the mine," says Orion MD Errol Smart.

"They have been telling members of the community that we will not be hiring locals, or using local subcontractors, which is not true. We have always made it clear we will be hiring locally and doing local enterprise development.

Intimidation

"It starts with an invitation to engage from people purporting to represent the local community but they very quickly make it clear that they will get the community to protest unless you give them what they want," says Smart.

"The people making the noise are probably 100 out of a community of 20 000, and they are also targeting other businesses in the Prieska area."

Smart says one of the advantages of operating in SA is the ability to approach a court to obtain an injunction to prevent destructive elements from trying to stop commercial development.

"If this was in Democratic Republic of Congo or some other African country, it would be much more difficult to get the support of the courts.

"Once we had the injunction, we were able to get the Public Order Policing Unit to come and disperse the protesters."

Incidents such as these explain why SA companies attract a discount among foreign investors, adds Smart.

Source of disturbance

The source of this disturbance is the Preferential Procurement Policy Framework Act which allows 30% of all contract value above R30 million on state construction contracts to be allocated to certain designated groups, including black-owned small and medium-sized enterprises.

The regulations do not apply to private sector construction contracts, but this has not deterred local forums who sow confusion over the preferential procurement policy.

DA shadow minister of mineral resources James Lorimer says Orion is one of just a few medium-sized mining projects in SA that is proceeding despite onerous BEE requirements stipulated by the Mining Charter.

"It [Orion] has been at great pains to ensure its BEE requirements involve local people, rather than by empowering black players in the industry who have already been empowered previously. This project and all medium and major mining projects in South Africa are struggling to make the case to international investors.
"If the situation in Prieska is allowed to persist, it will send a signal that mining in South Africa is uninvestible," said Lorimer, writing in Politicsweb.

Showcase pace-setter

The Prieska copper-zinc mine is a landmark project intended to showcase to the world that South African mining is alive and well.
In a country starving for fresh mining investment, Prieska was the pace-setter.
The 'mafia' started showing interest after Australian-based Orion Minerals completed its bankable feasibility study in May 2020.
"It then became clear that we would start appointing contractors and project managers, and this was when the local business forum started to change their previous constructive engagement with us, to unrealistic and unsustainable demands," says Smart.
The copper-zinc project is a revival of the old Anglovaal Prieska copper mine that closed down in 1991 after a halving in copper prices. Orion believes it has found a way to make the project work using more efficient mine design and improved mining and processing technologies.
The mine will require R4-5 billion in funding, of which 80% will be spent within SA. The feasibility study targets approximately 22 000 tonnes per annum (tpa) of copper and 70 00tpa of zinc in the initial 12-year operating phase, though Smart says a 20-year lifespan seems increasingly realistic as more data comes to light.
Minister of Mineral Resources and Energy Gwede Mantashe is keen to get the project kicked off, given the signal this sends to the rest of the world.
Copper prices have been on a tear since April 2020, more than doubling in price in the last year.

Highlights from the latest bankable feasibility study:

43% increase in pre-tax free cash flow to Au$1.6 billion (R19.2 billion) 36% increase in pre-tax net present value (at an 8% discount rate) to Au$779 million (R9.3 billion) five-month reduction in the capital payback period to 2.4 years; and 6% decrease in all-in-sustaining costs to US$3 531/t (US$1.60/lb) of copper equivalent metal sold.

Appendix 3: Letter of permission to conduct the research in Siyathemba Local Municipality

SIYATHEMBA MUNISIPALITEIT

SIYATHEMBA MUNICIPALITY

KANTOOR VAN DIE MUNISIPALE BESTUURDER
Victoriastraat
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Prieska
8940
Telefoon (053) 353 5317
Faks (053) 353 1386
E-pos: mm@siyathemba.gov.za

OFFICE OF THE MUNICIPAL MANAGER
Victoria Street
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Prieska
8940
Telephone (053) 353 5317
Fax (053) 353 1386
E-mail: mm@siyathemba.gov.za

Navrae
Enquiries: HH Meiring

Datum:
Date: 28-10-2021

Verwysing
Reference: 3R

University of Pretoria
Cnr. Lynnwood Road and Roper Street
Private bag X20
Hatfield
0028

Dear Prof. Noeleen Murray,

RE: GRANTING OF PERMISSION TO INTERVIEW SIYATHEMBA MUNICIPAL OFFICIALS

Your e-mail dated 21 October 2021.

I Mr. Howard Humphrey Meiring, Acting Municipal Manager of the Siyathemba Municipality hereby grant permission to Mr. Sonwabile Lugogo to perform his research for the University as required.

Kind regards,

.....
ACTING MUNICIPAL MANAGER
HH MEIRING
/hhm

MUNISIPALITEIT / MUNICIPALITY
2021 -10- 28
SIYATHEMBA

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Appendix 4: Consent form and the research question guide for the research participants

INFORMED CONSENT OF INDIVIDUAL BEING INTERVIEWED
Student: Sonwabile Lugogo
Student number: 10594303
Name of institution: University of Pretoria
Name of Individual: _____

Masters research title: Assessing the effectiveness of climate finance in promoting a just transition: A case study of Siyathemba Local Municipality in Northern Cape, South Africa

This study is aimed towards the completion of my Master's Degree in Development Studies at the University of Pretoria. The study seeks to assess the extent to which climate finance has managed to advance a just transition at a local municipal level. Siyathemba Local Municipality (SLM), which is located in the Northern Cape Province of South Africa, will be used as a case study for this research.

In 2011 South Africa committed to decarbonising its energy sector by launching the country's Renewable Energy Independent Power Projects Procurement Program (REIPPPP). The programme has managed to attract over R200 billion in private sector finance since it was launched. The REIPPPPP aims to decarbonise South Africa's energy sector while simultaneously supporting socio-economic development of local communities that are in close vicinity to where Independent Power Producers (IPPs) are located. This research aims to determine to what extent has the climate finance investments made in the REIPPPP contributed to socio-economic opportunities in SLM.

Data gained from this interview and others will be analysed to assess whether climate finance invested in IPPs in SLM have actually translated into socio-economic benefits that advance a just transition in SLM. The research aims to investigate socio-economic opportunities that have accumulated as a result of the implementation of IPPs in SLM.

1. Purpose of the interview:

The purpose of this interview is to investigate whether climate finance investment in REIPPPP has managed to promote socio-economic opportunities in SLM where some of South Africa's IPPs are operating. The interview seeks to gain an in-depth account of your understanding as a key stakeholder in local socio-economic development issues in SLM. The interview seeks to examine the contribution of IPPs in promoting a just transition in SLM. The interview seeks to build understanding around the contribution of climate finance in promoting a just transition at a local municipal level in terms of creating socio-economic opportunities for the local population.

2. Procedures:

Should you agree to participate in this interview, you and I will decide on time and venue for the interview. The interview should not take more than 30 minutes of your time. Both online/ telephonic interviews and face-to-face interviews may be used. The interview will take place according to your preferred method. If a face-to-face interview is selected Covid-19 protocols such as wearing of masks, social distance, sanitisation will be adhered to. In cases where there is a need for a further engagement with you, a follow up interview will be requested.

3. Benefits:

There is no financial benefit for participating in this interview. This research will build knowledge on the effectiveness of climate finance as a precursor to a just transition in vulnerable communities. The research will benefit from your in depth and detailed information about the role that has been played by climate finance in promoting a just transition in SLM.

4. Compensation:

Although your participation in this research is highly appreciated you must note that you will not gain benefits, financially or in any other way from the interview. However, should you require a copy of the final research report that can be arranged after the research has been submitted to the University of Pretoria.

5. Confidentiality:
All the information obtained will be confidential. Your identity will not be revealed in the write-up of the report, unless you grant permission for me to do so. No names will be used in order to protect your identity, unless of course you give a consent for your full name to be used in the write-up of the final thesis. If you agree for the interview to be recorded all the data files will be kept in a safe location that is only accessible to the researcher. Should you wish to have the copy of your recorded interview, that can be arranged.

6. Data storage
In line with the University of Pretoria's data storage policy, all the research data from the interviews will be stored in a password-protected format at the academic department for a minimum of 15 years. The data will be kept in password protected files that will be retained by the university for a minimum of 15 years. The data files will be password protected and the researcher will be the only one who has access to the files. Your permission is requested for the data to be reused for further research in future. This will enable the researcher to continue re-analysis of the data you provided without having to request for your consent again. However, if you feel like you do not want the data collected from the interview to be reused for other research purposes that will be accepted. The data gathered from the interview will not be used for any profit related activities; the data will only be made available for non-profit and academic research purposes.

7. Uncertainties:
Should there be any concerns or questions regarding this interview, the supervisor for this study from the University of Pretoria can be contacted.

Supervisor: Professor Noeleen Murray
Email Address: noeleen.murray-cooke@up.ac.za

Student: Mr Sonwabile Lugogo
Email Address: u10594303@tuks.co.za

8. Declaration
I (name and surname) ---------- hereby give my consent to participate in this study and interview. I declare that I am fully aware of the purpose of the research and what it will be used for. I am willing to share my knowledge.
Are you comfortable with the interview being recorded: YES or No
This document was signed at _____on the _____day of _____ 2021

Interviewee's signature

Research question guide

Interview question guide for the local municipality

- What is your understanding of climate finance (finance for climate change activities) and just transition?

- Is just transition/climate finance featured/mentioned in the municipality's Integrated Resource Plan?
- Has there been any training provided to local government officials about climate finance and just transition and how to integrate their principles in the municipality's IRP?
- Are the any financial investments made by the independent power producers that have contributed to local municipality's socio-economic programmes?
- How has the climate finance invested in the independent power producers contributed to the socio-economic development of local communities around Siyathemba Local Municipality?
- What kind of relationship do the local government and the independent power producers situated in Siyathemba Local Municipality have?
- Does the municipality play any role in ensuring that the IPPs invest some of their profits to the local municipality as per the requisite of the REIPPPPP?
- Does the municipality have any role to play in ensuring that the money invested by the IPPs in socio-economic development projects is equitably distributed across gender, age, race and income groups?
- Since the implementation of renewable energy projects in Siyathemba Local Municipality has the socio-economic status of the municipality improved or worsened? Please explain your answer making reference to the following:

Employment opportunities	Entrepreneurship opportunities	Income generation	Women empowerment	Social development programmes

- What is the role played by local government in ensuring that national policies that are in line with REIPPPP and just transition efforts are being implemented by IPPs in SLM?

Interview question guide for the IPPs

- How many renewable energy projects does your company have in Siyathemba Local Municipality?
- How many socio-economic development programmes does your company support in Siyathemba Local Municipality?
- How does the company identify which projects to support in communities around Siyathemba Local Municipality?
- What are the kinds of jobs that are created by the company for local community members?
- What are the key priorities that the company considers when it receives a funding request?
- Does the company have projects that are directed towards empowering women and girls?

- What challenges does the company face when it comes to supporting socio-economic programmes in Siyathemba Local Municipality?
- Does the company assess the needs of the communities and develop strategies as per the REIPPPP procurement policy?

Interview question guide for the community-based organisations

- What is your understanding of climate change and climate finance?
- Has your local organisation received any climate finance related funding from the local IPPs?
- Do you have any knowledge of how local-based independent power producers are supposed to support local socio-economic programmes?
- What role does your organisation play in socio-economic development of Siyathemba Local Municipality?
- Are you involved in any of the socio-economic development projects that are supported by any of the independent power producers located in Siyathemba Local Municipality?
- Do you have any knowledge of how local-based independent power producers are supposed to support local socio-economic programmes?
- Are local-based organisations and leadership involved in decisions that are made by IPPs when distributing socially responsible investments to local community development initiatives?
- Since the implementation of IPPs in SLM, have you observed any changes in terms of socio-economic development?
- Do the IPPs hold frequent stakeholder participation with the communities in order to hear the needs of communities?