The impact of the South African Renewable Energy Independent Power Producers Procurement Programme on South African communities: A case study

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DEDICATION

بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيْمِ

This dissertation is dedicated to my parents, Mehrunnisa and Hoosain, who have supported me throughout this degree and without whom this would not have been possible.

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ABSTRACT

South Africa is one of the most unequal societies in the world with vast differences in socio-economic conditions. At the same time its carbon emissions are the highest on the continent. Recognising the need to both reduce poverty and inequality and carbon emissions, the South African government introduced the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). The REIPPPP is a competitive bidding scheme and once independent power producers (IPPs) are appointed as preferred bidders a non-negotiable, standardised and rand (ZAR)-dominated 20-year power purchase agreement is signed with the national energy producer, Eskom. In order to qualify, project companies must commit to certain economic and socio-economic development criteria within their host communities. The inclusion of this requirement is meant to uplift the quality of life in the host communities. The objectives of this study included exploring the socio-economic benefits of the REIPPPP using the SlimSun Swartland Solar Park (SlimSun) project in the Swartland Municipality as a case study. This study was thus exploratory in nature and qualitative research techniques were used. The sample population was derived through convenience sampling and data was collected via interviews with the project company, a local NGO, the municipality and the local community trust.

From the thematic analysis, community trust; education; food, nutrition and healthcare; and upliftment and dignity were identified as the socio-economic development benefits which the host community derived from the REIPPPP. In investigating the experience and perceptions of community members with SlimSun, a key theme that emerged was the importance of trust between stakeholders and how strong community relationships, including with local government, helps in identifying initiatives that address the needs of the community. While this study cannot make generalisations, based on the findings, the researcher would recommend that the REIPPPP Office considers providing guidelines to the REIPPPP projects that working with local governments and NGOs may help to create lasting benefits to host communities.

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GLOSSARY OF TERMS

BBBEE	Broad-Based-Black Economic Empowerment
CO_2	carbon dioxide
COP	Conference of Parties
CSP	concentrated solar thermal
CSR	corporate social responsibility
DBSA	Development Bank of Southern Africa
DOE	Department of Energy
ECD	early childhood development
GCNSA	Global Compact Network South Africa
GDP	gross domestic product
GW	gigawatt
HSRC	Human Sciences Research Council
IEA	International Energy Agency
ILO	International Labour Organization
IO	input-output
IPCC	Intergovernmental Panel on Climate Change
IPP	independent power producer
IRENA	International Renewable Energy Agency
IRP	Integrated Resource Plan
MW	megawatt
NDP	National Development Programme
NERSA	National Energy Regulator of South Africa
NGO	non-governmental organisation
NPC	National Planning Commission
O&M	operation and management
OECD	Organisation for Economic Cooperation and Development
PPA	power purchase agreement
PPPs	public-private partnerships
PV	Photovoltaic
R&D	research and development

REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
RET	renewable energy technologies
RSA	Republic of South Africa
SA	South Africa
SDG	Sustainable Development Goals
SOE	state-owned-enterprise
SSA	sub-Saharan Africa
StatsSA	Statistics South Africa
TEFC	total energy for consumption
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

CHAPTER 1
BACKGROUND

1.1. INTRODUCTION

There are 54 countries on the African continent and all face different energy sector challenges (Wesseh Jr & Lin, 2016). Sub-Saharan African (SSA) countries' access to electricity differs greatly to that of north Africa due to the economically diverse nature of the continent and the sub-region (Mohammed, Mustafa, & Bashir, 2013).

2015 saw the adoption of the United Nations Sustainable Development Goals (SDGs) which are 17 goals aimed at improving the lives of humans and protecting animals and the planet we live on. As part of the goals, significant emphasis was placed on ensuring "access to affordable, reliable, sustainable and modern energy" (United Nations, 2018; Trotter, 2016). According to Bazilian et al. (2012), the provision of reliable and affordable energy is key to overcoming the plethora of global development challenges such as poverty, food security, climate change, inequality, education and health. In 2016, renewable energy accounted for approximately 18.2 percent of global total energy for consumption (TEFC), while energy from modern renewables was 10.4 percent (REN21, 2018).

One of South Africa's largest renewable energy programmes is the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). A large infrastructure plan was designed to address concerns over South Africa's dependence on coal as a primary energy source and reduce carbon emissions (Walwyn & Brent, 2015). The REIPPPP is a competitive bidding scheme with the main criterion of evaluation being pricing, a 70 percent weighting. The other 30 percent is reserved for factors such as rural development, skills development, job creation, community ownership and participation of historically disadvantaged individuals (Baker & Wlokas, 2015; Wlokas, 2015).

South Africa accounts for the majority of electricity consumption in sub-Saharan Africa (Ouedraogo, 2017). The energy sector is managed by the Department of Energy (DOE) and the supply of electricity is controlled and facilitated by the state-owned-enterprise (SOE), Eskom. Eskom holds a monopoly on the market and has long been plagued by inefficiencies and corruption which led to rolling blackouts and electricity load-shedding in 2015 and 2018. Eskom controls the national high-voltage transmission grid and distributes 60 percent of

electricity directly to customers while the bulk is bought by municipalities and distributed (Eberhard, Kolker, & Leigland, 2014).

This power system is characterised by large power stations and the energy supply is dominated by coal which contributes to 70 percent of the country's primary energy and 90 percent of its electricity (Eberhard et al., 2014). According to the *Electricity, gas and water supply industry* report for 2016, fossil fuel generated 85.7 percent of the country's power in 2016, followed by 5.2 percent by nuclear power and 3.2 percent by natural gas. (StatsSA, 2018).

While South Africa is not required to reduce greenhouse gas emissions, former President Jacob Zuma pledged at the Copenhagen Conference of Parties (COP) in 2009 to reduce its CO_2 emissions to 34 percent below a business-as-usual scenario by 2020 and below 42 percent by 2025 if the international community pledged financial and technological support (Eberhard et al., 2014). In 2011, the REIPPPP was introduced in South Africa with the aim of diversifying the energy mix to be more environmentally friendly while at the same time addressing the socio-economic inequalities and challenges faced by South Africans.

1.2. PROBLEM DEFINITION

South Africa is one of the most unequal societies in the world with vast differences in socio-economic conditions and where the Gini coefficient (measure of income inequality) "measuring relative wealth reached 0.65 in 2014 based on expenditure data (excluding taxes), and 0.69 based on income data (including salaries, wages, and social grants)" (World Bank, 2017). Contributing to this inequality are rising food and electricity prices which forces many of those at the bottom of the income pyramid to choose between purchasing food and electricity (OXFAM, 2013).

In 2011 the South African government launched the REIPPPP which aims to encourage investment and contribute to socio-economic and environmental growth (Baker & Wlokas, 2015; Eberhard et al., 2014; Wlokas, 2015). Part of this programme mandates corporations involved to invest in their host communities to foster socio-economic development, including employment within their host communities. Although corporations are mandated to report quarterly on their expenditure on socio-economic development initiatives within their host communities, there is no regulation which forces them to monitor and evaluate the actual impact the project is having on the lives of those in the community (Baker & Wlokas, 2015; Boulle, Boyd, Cunliffe, & Keen, 2014).

This lack of reporting makes it difficult to assess the progress made towards improving the livelihood of host communities. A lack of assessment means that the promised bids may not have long-term benefits and these bids are thus a tick-box exercise rather than effective means of bettering the lives of rural communities.

It is therefore important to assess the socio-economic bid requirements associated with REIPPPP projects and identify whether they have improved livelihood conditions in the relevant host communities as a means of evaluating the progress towards reducing poverty and inequality among beneficiary communities.

1.3. RESEARCH QUESTIONS

The research sought to answer the following questions:

a. What social and economic benefits have host community members experienced since the implementation of the REIPPPP project?

b. Do members of the host communities feel that their lives have improved since the implementation of the REIPPPP project?

1.4. RESEARCH OBJECTIVES

The following were thus the research objectives:

1. To explore the social and economic benefits experienced by the host community members since the implementation of the REIPPPP project.
2. To understand community members' perceptions and experiences related to their livelihoods since the implementation of the REIPPPP project.

1.5. JUSTIFICATION OF THE STUDY

How to measure the impact of these initiatives is crucial to understanding whether they are in fact having the intended outcomes of alleviating poverty and reducing inequality in the affected areas.

Given the freedom of the REIPPPP projects to choose how to invest in the communities and the complex challenges that exist, there is a need for "multifaceted interventional strategies that include monitoring and evaluation" (Biwott, Egesah, & Ngeywo, 2017). which is important for sustainable economic development.

Understanding the impact on host communities is important in understanding the real benefit of socio-economic initiatives. The socio-economic bid requirement was an attempt to alleviate the abject poverty present in some South African communities and begin to reduce the levels of inequality present. It was thus important for this study to monitor and evaluate these initiatives in order to understand whether communities are benefiting as intended. To gain this understanding, we must appraise the experience of community members as it is their lived experiences that the REIPPPP aims to improve. These experiences can sometimes provide a better gauge of whether true transformation and change is occurring rather than voiceless numbers that have been reported on.

If they are not, the study could motivate for government to revisit the regulations to ensure that they do. If they are achieving their objectives, then the REIPPPP could be a benchmark for other African countries' renewable energy initiatives. This research includes case specific examples that could help other projects improve the impact in their host communities by contributing to policy changes.

1.6. ORGANISATION OF THE STUDY

This paper introduces the REIPPPP and collates the relevant empirical literature associated with the programme and more generally the benefits of the introduction of renewable energy projects globally as well as the contribution of the private sector to community development. The aim of the study was guided by the research questions which aimed to explore the experiences of individuals who live in the host communities; the intended beneficiaries of the REIPPPP. Through the qualitative approach this study undertook, this dissertation presents a narrative of the experiences of the residents of the host communities leading to a better understanding of whether the projects are in fact having their intended outcomes.

CHAPTER 2
LITERATURE REVIEW

2.1. INTRODUCTION

This chapter focuses on the literature associated to the study by analysing the inequality in South Africa and the potential of the REIPPPP to reduce South Africa's inequality and poverty levels. The chapter expands on the potential benefits of renewable energy and how these may be leveraged in the South African situation.

2.2. INEQUALITY IN SOUTH AFRICA

Inequality has widened in many countries globally during the last few decades, with those at the top end of the income spectrum experiencing gains disproportionately when compared to those at the lower end of the spectrum. In many Organisation for Economic Cooperation and Development (OECD) countries this may be due to the weakening of redistributive policies with top earners and corporations seeing tax cuts coupled with decreasing union power (Wittenberg, 2017).

Yet South Africa, whose tax rates on wealthy individuals and corporations have continued to increase and whose unions are actively involved in the politics of the country, continues to experience one of the highest levels of inequality in the world. It's Gini coefficient stood at "0.65 in 2014 based on expenditure data (excluding taxes), and 0.69 based on income data (including salaries, wages, and social grants)" (World Bank, 2017). Much of the development literature is in agreement that income inequality is an important factor in income growth leading to actual poverty reduction (Fosu, 2015).

According to a World Bank report released in 2018, one percent of South Africans own 70.9 percent of South Africa's wealth while the bottom 60 percent controls only seven percent of the country's assets (World Bank, 2018).

Alarming statistics such as these are part of the reason why reducing poverty and inequality has been at the top of South African development policies and programmes since moving into a democracy in 1994. Initially, the focus was on the Reconstruction and Development Programme but currently the government is focused on the National Development Plan: Vision 2030 (NDP) (World Bank, 2018).

The NDP aims to eliminate poverty and reduce inequality by 2030 by focusing on the critical capabilities needed to transform the economy and society (National Planning Commission [NPC], 2013).

To achieve its goal, the NDP identified 19 enabling milestones that will help South Africa reach its goal of eliminating poverty and reducing inequality by 2030. These include increasing employment and per capita income; creating a competitive base of regulatory frameworks, infrastructure and human resources; ensuring posts better reflect the country's racial, gender and disability makeup; and broadening ownership of assets to historically disadvantaged groups (NPC, 2011). Bettering the quality of education received is one of the most important goals, as is providing access to quality healthcare while making sure everyone has access to food and nutrition. In addition, access to clean and sufficient energy and a safe society is critical to achieving the NDP's goals.

Coupled with the milestones are ten critical actions that the government would need to take:

1. A social compact to reduce poverty and inequality and raise employment and investment.
2. A strategy to address poverty and its impacts by broadening access to employment, strengthening the social wage, improving public transport and raising rural incomes.
3. Steps by the state to professionalise the public service, strengthen accountability, improve coordination and prosecute corruption.
4. Boost private investment in labour-intensive areas, competitiveness and exports, with adjustments to lower the risk of hiring younger workers.
5. An education accountability chain, with lines of responsibility from state to classroom.
6. Phase in national health insurance, with a focus on upgrading public health facilities, producing more health professionals and reducing the relative cost of private healthcare.
7. Public infrastructure investment at 10 percent of gross domestic product (GDP), financed through tariffs, public-private partnerships, taxes and loans and focused on transport, energy and water.
8. Interventions to ensure environmental sustainability and resilience to future shocks.
9. New spatial norms and standards – densifying cities, improving transport, locating jobs where people live, upgrading informal settlements and fixing housing market gaps.

10. Reduce crime by strengthening criminal justice and improving community environments (NPC, 2013).

The World Development Report (World Bank, 2000) and Silvia and Choudhury (2006) emphasised that "opportunity, empowerment, and security have intrinsic value for poor people" and because of the important interrelated aspects of them, any strategy to reduce poverty must include all agents in society, namely the private sector, civil society, governments and those in need themselves. Silvia and Choudhury (2006) further argued that "the critical areas for correcting deprivation and marginalization are entitlement creation, employment, the generation of empowerment by participation, and village development with complementary relationships between the rural and urban sectors."

In trying to address the inequalities in SA after the collapse of the apartheid regime, the country required significant transformation to ensure that it could re-enter the global market competitively (Juggernath, Rampersad, & Reddy, 2011). The government introduced what is known as Broad-Based Black Economic Empowerment (BBBEE) (Juggernath et al., 2011).

Before democracy in SA in 1994, black (African, Coloured and Indian) South Africans were excluded from meaningfully participating in the country's economy (Esser & Dekker, 2008) by the then government which resulted in poverty and a weak economy (Juggernath et al., 2011). According to the Broad-Based Black Economic Empowerment Act of 2003, BBBEE "means the economic empowerment of all black people including women, workers, youth, people with disabilities and people living in rural areas through diverse but integrated socioeconomic strategies" (Republic of South Africa [RSA], 2004). A key objective of the Act, amongst others, is "empowering rural and local communities by enabling access to economic activities, land, infrastructure, ownership and skills; and promoting access to finance for black economic empowerment" (RSA, 2004).

To ensure that that BBBEE has the desired empowerment outcomes, the South African government has promulgated legislation since 1994 specific to corporate social responsibility (CSR) to promote social responsibility and the empowerment of communities and correct racial imbalances (Esser & Dekker, 2008). It was imperative that it addressed the gross inequalities it faced and to do this it needed to find new ways of doing. "Business must deliver results locally, and the excluded should be included and consulted" (Ashley & Wolmer, 2003) became a key tenet in the push for transformation.

The introduction of the BBBEE model meant that CSR was no longer optional and is seen as one way of reducing the inherent inequalities in South Africa.

2.3. RENEWABLE ENERGY POWER PRODUCER PROCUREMENT PROGRAMME (REIPPPP)

Recognising the growing local demand for energy as well as the increasing potential of renewable energy in South Africa's energy mix, the Renewable Energy Policy White Paper was published in 2003 which set out renewable energy targets.

In 2009, President Jacob Zuma made a commitment in Copenhagen that South Africa would reduce its greenhouse gas emissions to 34 percent below a business-as-usual scenario by 2020 and below 42 percent by 2025 if the international community pledged financial and technological support (Eberhard et al., 2014). This opened the doors to new procurement strategies for renewable energy.

Another contributing factor was the DOE's adoption of the Integrated Resource Plan (IRP) 2010–2030 which planned to include 17.8 GW of solar and wind energy capacity by 2030 (Relancio, Cuellar, Walker, & Ettmary, 2016). It was decided, however, that this may result in non-competitive behaviour and procurement which could have been contentious in relation to the DOE's obligations under public finance and procurement regulations (Relancio et al., 2016). Following the DOE's review process of the IRP and the consultations with developers, financiers and lawyers, the approach was reconsidered and the REIPPPP was announced, enabling a competitive bidding process for projects to be procured under an IPP approach, for the first time in South Africa.

The process was overseen by a dedicated project team formed by representatives from the DOE and the National Treasury public-private partnership (PPP) unit, which was to become the DOE IPP unit. This unit also made extensive use of independent legal, technical, financial and governance consultants to help design the process and standardised tender documents and contracts. The transparent and consultative process, as well as the standardised contracts and 20-year power purchase agreement (PPA), helped to encourage development of projects and drive interest in the programme (Relancio et al., 2016).

The REIPPPP is a competitive bidding scheme and once IPPs are appointed as preferred bidders, a non-negotiable, standardised and rand (ZAR) dominated 20-year PPA is signed with

the national energy producer, Eskom. Additionally, the PPA is supported by what is called an implementation agreement between the IPP and the DOE. This agreement guarantees Eskom's payments. In the case of default, the standard direct agreement between the IPP, Eskom, the DOE and lenders, provides lenders with step-in rights. While in general the cost of shallow connections (e.g. to the nearest substation) are to be borne by the IPP, deep connection costs (those that strengthen Eskom's transmission system) are not. This is the main difference between the connection agreements signed as they depend on whether the connection is to the transmission or distribution system (Eberhard & Naude, 2017).

To become a preferred bidder and ultimately winning bidder there are a range of requirements that must be met which fall under Part A, Part B and Part C. Part A speaks to general requirements including eligible bidders, documentation fees and registration; price caps; capacity restrictions; various contractual agreements; grid provider requirements and interface; the use of advisors; generation licence from the National Energy Regulator of South Africa (NERSA); bid guarantee and preferred bidder guarantee; bid validity period; development fee; bid currency; briefing notes and whether the project seeks dual participation in the REIPPPP and the smaller IPP project (Eberhard & Naude, 2017; Wlokas, 2015).

Part B of the requirements details the qualification criteria that must be adhered to once all of Part A has been seen to. It includes the structure of the project; legal criteria and evaluation; land acquisition and land use criteria and evaluation; environmental consent criteria and evaluation; financial criteria and evaluation; technical criteria and evaluation; economic development criteria and evaluation; value for money and returning compliant bidders (Eberhard & Naude, 2017; Wlokas, 2015).

Part C details evaluation criteria. The bids that are compliant proceed to the second stage where they are subject to a comparative evaluation (Eberhard & Naude, 2017). Here the main criterion of evaluation is pricing, a 70 percent weighting. The other 30 percent is reserved for factors such as rural development, skills development, job creation, community ownership and participation of historically disadvantaged individuals (Baker & Wlokas, 2015; Wlokas, 2015). The economic development aspect is based on the Economic Development Policy of March 2011, which regulates empowerment outputs in the REIPPPP (Eberhard & Naude, 2017).

There are currently 95 REIPPPP projects that have been approved through the bidding processes that are at different stages in South Africa (Energy blog, 2021) (see Appendix 1).

In the eight-year period since its inception, the programme has attracted R209.4 billion in committed private sector investment (South African Government News Agency, 2019). Eight-two of the REIPPPP projects are fully operational. Of the fully operational projects, six projects are concentrated solar thermal (CSP), one is landfill gas, 29 are onshore wind, two are small hydro plants and 44 are solar photovoltaic (PV) (Energy blog, 2021).

There are 15 fully operational projects in the Eastern Cape, four in the Free State, one in Gauteng, five in the North West Province, three in Limpopo, 41 in the Northern Cape and 13 in the Western Cape (Energy blog, 2021). A summary of the different technologies, capacities and the status for each province is shown in Table 1.

The funding for the programme was initially provided through a memorandum of agreement between the DOE, National Treasury, and the Development Bank of Southern Africa (DBSA). They were funded by way of senior debt and a corpus of R80 million for related administrative expenses. Technical assistance was sought from bilateral donor agencies from Denmark, Germany, Spain and the UK and in 2011 the National Treasury of South Africa availed R100 million, part of which was used to repay the DBSA. Following the second round of bidding, the programme has become self-financed through bidder registration fees and fees paid by successful IPP project companies. Such funding arrangements have meant that the programme has not formed part of the government budget following rounds one and two (Rajpurkar, 2015).

Table 1: REIPPPP projects in South Africa's nine provinces, their capacity and status

Province	Technology	Total capacity (MW)	Status
Eastern Cape	16 Onshore Wind; 1 Solar Photovoltaic (PV)	1516	15 Fully operational; 2 Construction
Free State	3 Solar PV; 2 Small Hydro	207.8	4 Fully operational; 1 Construction
Gauteng	1 Landfill Gas	18	1 Fully operational
North-West Province	5 Solar PV	274.8	5 Fully operational
KwaZulu-Natal	1 Biomass	16	Halted/aborted
Limpopo	3 Solar PV	118	3 Fully operational
Mpumalanga	1 Biomass	62	1 Construction
Northern Cape	28 Solar PV; 8 Concentrated Solar Thermal; 11 Onshore Wind; 1 Small Hydro	3560.8	41 Fully operational; 1 Awaiting construction; 5 Construction; 1 Halted/aborted
Western Cape	5 Solar PV; 9 Onshore Wind	837.95	13 Fully operational; 1 Construction

Source: Energy blog (2021)

2.3.1. Economic development criteria of REIPPPP

The 70:30 split between price and economic development objectives showed a large difference compared to the government's usual 90:10 split in favour of price. This was only made possible by an exemption to the Preferential Procurement Policy Framework Act of 2000 (Eberhard & Naude, 2017).

While some stakeholders argued the trade-off between price and economic development was too complex and hence created costs, the objective of the economic development criteria is to facilitate local job growth, community development and Black commercial interests. Its purpose is also to stimulate growth in emerging and smaller enterprises within the energy sector. This is in line with the government's objectives as articulated in the NDP (Eberhard & Naude, 2017) and hence is integral to the success of the programme and a main reason for the government support.

The DOE requires renewable energy developers to identify the socio-economic needs of communities within a 50-kilometre (km) radius of the area in which an IPP operates – its host community (Nkoana, 2018). However, according to Wlokas, Westoby and Soal (2017) and Nkoana (2018), project stakeholders continue to grapple with how to implement sustainable development initiatives. Economic-related targets can be seen in Table 2 below.

Table 2: Economic development criteria of the REIPPPP as in the first issue of the Request for Proposals (RFP) in August 2011

	Economic development elements	**Minimum threshold**	**Maximum target**	**Description**
1	Job creation – SA citizens	Various indicators		Number of jobs helped 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 ownership 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 for black people.

Source: Wlokas (2015)

Wlokas (2015) also pointed out that the selection of host communities is problematic as social and political dynamics can be negatively impacted by selectively identifying some beneficiaries; and the 50km radius can stretch over one or more municipal or provincial

boundaries making the alignment of socio-economic development plans with government policies difficult.

A major criticism is that there were no strategic guidelines to what these investments should be until recently and a flaw in the programme points to the fact that the renewable energy sector investments have failed to learn from successful community company relations that have spanned decades in South Africa (Wlokas et al., 2017). Project companies are left to decide what investments, other than the economic ones stipulated, they want to invest in, whether it be healthcare, education, water and sanitation and so on. Companies are required to invest between 0.7 and 1.5 percent of the total project revenue towards socio-economic development and up to 0.7 percent of the revenue can be chosen to fund economic development measures (Wlokas, 2015). However, there are no regulations to guide companies in addressing the needs and milestones as set out in the NDP 2030.

During the bidding process, IPPs submit a plan outlining how they will meet local community empowerment targets – 'local community empowerment targets' refer to specific community-based initiatives that directly benefit the community instead of 'economic development' that may include domestic industrialisation and preferential procurement – during the operation. These targets include job creation for locals, promoting local content, supporting local businesses and community-based organisations, as well as setting up a community trust that will disburse around one percent of IPP profits to surrounding communities (IPP Office, 2016; 2017; Nkoana, 2018). In order to meet this requirement, projects conduct a community needs analysis when meeting with the community. This is then submitted with the bidding documents.

Project developers of REIPPPP projects in South Africa have committed significant amounts of money to socio-economic development. According to research, there is a 90 percent probability that of the total resources committed to socio-economic development, around the 64 projects approved in bid rounds one to three, will amount to almost R580 million over the next 20 years (Wlokas, 2015).

However, it is important to note that jobs and funds do not happen at the same time but are staggered throughout the project cycle. Time, budget and capacity are short, but a few companies make the funding of small community projects part of their work right from the start (Wlokas, 2015).

Also, under the REIPPPP, the government reports on jobs created by IPPs in job years which refers to one person's employment for one year. For example, 40 job years could mean two people employed for twenty years each, or four people employed for 10 years each. Thus, calculating the exact number of jobs is difficult (Mpange, 2018).

Regardless of the oversights and criticisms, there are benefits to the introduction of renewable energy projects as seen globally.

2.4. SLIMSUN SWARTLAND SOLAR PARK

SlimSun Swartland Solar Park (SlimSun) was chosen as the REIPPPP project to focus on in this study as it falls in line with the research objective of understanding whether the REIPPPP socio-economic criteria have in fact benefited host communities and resulted in sustainable development.

2.4.1. Background and REIPPPP participation

SlimSun (Pty) Ltd (hereafter referred to as SlimSun) is a renewable energy generation facility and project company located in the Swartland Municipality in the Western Cape Province of South Africa. SlimSun was successful in the REIPPPP window 1 of bidding and has been operational since 4 August 2015 and on 20 June 2016 achieved full grid code compliance (PitchBook, 2020). It has an installed capacity of 5MW. As with all REIPPPP projects, SlimSun has had to commit to the REIPPPP socio-economic development requirements. That means that the project needs to contribute to the socio-economic development of the community in which it operates, namely the Swartland Municipality.

The company is jointly owned by Franco Afrique Technologies (Pty) Ltd (40 percent) and Evolution One Fund (40 percent) with a 20 percent ownership by the Swartland Solar Community Trust, a broad-based ownership scheme.

The company was responsible for the construction of the 5MW SlimSun Swartland Solar Park and currently operates and maintains it. As part of the REIPPPP socio-economic development requirements, the company is also responsible for the development of the Swartland community.

According to the decision document for SlimSun's application for a generation licence with NERSA, the plant's lifespan and its load factor is 25 years and 23 percent respectively. And

SlimSun has a power purchase agreement with Eskom for 20 years. There were no objections to the establishment of the power plant (NERSA, 2020).

2.4.2. SlimSun's obligation to its host community

As mentioned above, in many developing countries, persistent structural inequities, market imperfections and varying levels of state effectiveness have undermined the effectiveness of social policy and South Africa is no different. The private sector and non-governmental organisations are important contributors to development in more remote areas in order to address levels of poverty, access to education, healthcare, sanitation and basic services.

In its presentation to NERSA when applying for its operating licence, SlimSun made reference to the following key areas it would target through development in line with the IPP office stipulations:

- Swartland Solar Community Trust
- Education
    - Early childhood development (ECD)
    - Remedial literacy programme
    - Darling parenting programme
- Socio-economic development
    - Agricultural integrated PV
    - Community dignity and upliftment
- Local enterprise development
    - Job creation
    - Solar entrepreneurship
    - Micro enterprise support structure

These areas are in line with the social development focus areas of establishing child facilities/ promoting child development and facilitating access to the economy and in line with the goals of the Swartland Municipality and with the broader mission of the NDP which is to eliminate poverty and reduce inequality by 2030 (NPC, 2011). Table 3 below outlines the alignment of SlimSun initiatives with the mission of the NDP and the REIPPPP.

Table 3: Link between SlimSun's initiatives, the NDP and the REIPPPP

NDP	REIPPPP	SlimSun
Increase employment from 13 million in 2010 to 24 million in 2030 (NPC, 2011).	Job creation of South African citizens – minimum of 20 percent.	111 job years (IPP data reflects cumulative values over the construction phase and projected operational life (production phase) of the projects (i.e. 20 years) (IPP Office, 2020).
Broaden ownership of assets to historically disadvantaged groups (NPC, 2011).	Ownership (overall black ownership requirement)* – a minimum of 12 percent of project shareholding.	Swartland Solar Community Trust – 20 percent ownership of SilmSun.
	Ownership (community ownership requirement) – a minimum of 2.5 percent of project shareholding.	
Increase the quality of education so that all children have at least two years of preschool education and all children in grade 3 can read and write (NPC, 2011).	Socio-economic development – 1 percent of project revenue.	Early childhood development centres Remedial literacy programme Darling parenting programme.
Produce sufficient energy to support industry at competitive prices, ensuring access for poor households, while reducing carbon emissions per unit of power by about one-third (NPC, 2011).	The project in its entirety is to promote the use of clean energy and access in non-urban centres.	Solar energy is regarded as clean energy.

Source: Author's own compilation

2.4.3. Host community location and demographics: Swartland Municipality

The Swartland Municipality is located in the Western Cape province of South Africa and encompasses the towns of Abbotsdale, Chatsworth, Darling, Kalbaskraal, Koringberg, Malmesbury, Moorreesburg, Riebeek Kasteel, Riebeek West, Riverlands and Yzerfontein (Swartland Municipality, 2020).

In 2019, the population density of the municipality was 36 people/km^2 (Western Cape Government, 2020) with a population of just under 134,000 and with a total number of

households just over 39,000 (Swartland Municipality, 2020). Of these households, just under 9,000 earn less than twice the state pension grant +10 percent.

In terms of education, the Matric Pass rate was 84.5 percent in 2018 with a learner retention rate of 68 percent and a learner to teacher ratio of 29.7 percent. It has been noted by provincial government that "the availability of adequate education facilities such as schools, Further Education and Training (FET) colleges and schools equipped with libraries/media centres could positively affect academic outcomes (Western Cape Government, 2020)."

The Gini coefficient for the municipality is 0.597 which indicates quite high levels of poverty (Western Cape Government, 2020).

In general, access to basic service delivery is quite high as shown by the population survey from 2016: access to water (92.8 percent), refuse removal (83.5 percent), electricity (98.7 percent), sanitation (96.2 percent) and housing (94.6 percent) (Western Cape Government, 2020).

2.4.4. Local economy and local economic development

According to real gross domestic production (GDPR) contributions in 2017, the three largest sectors are manufacturing (24.5 percent), wholesale and retail trade (17.4 percent) and agriculture, forestry and fishing (16.1 percent) (Swartland Municipality, 2020).

According to employment contributions in 2017, these sectors differ slightly with the top three including agriculture, forestry and fishing (29.3 percent), wholesale and retail trade (19.9 percent) and community, social and personal services (12.9 percent) (Swartland Municipality, 2020).

The latest recorded unemployment rate is around 10 percent which given the recent COVID-19 pandemic has surely increased rather than decreased given trends globally. The proportion of households with no income in 2016 was 10.4 percent which is also expected to have increased due to the global pandemic. The majority of workers were low-skilled (19.9 percent) while only 15.3 percent were skilled (Western Cape Government, 2020).

In the 2019/20 municipal budget, R433,996 million across the 2019/20 MTREF was broken up as indicated in the table below (Western Cape Government, 2020):

Table 4: Swartland Municipality 2019/20 municipal budget breakdown

Swartland: Capital Budget, 2019/20 MTREF (R'000)				
Functional Classification	**2019/20**	**2020/21**	**2021/22**	**Total**
Governance and Administration	5 931	7 785	1 889	15 605
Community and Public Safety	4 840	12 764	9 151	26 756
Economic and Environmental Services	55 552	59 816	40 463	155 831
Trading Services	77 535	85 964	72 305	235 805
Energy Sources	19 244	24 800	25 579	69 623
Water Management	7 145	401	8 450	15 997
Waste Water Management	44 628	57 947	30 167	132 742
Waste Management	6 518	2 816	8 109	17 443
Total	**143 858**	**166 330**	**123 809**	**433 996**

Source: Swartland Municipality (2020)

The Swartland Municipality is focused on five strategic goals for economic growth and inclusion: to strengthen the competitive advantages of Swartland; attract business to locate and grow in the area; make local markets work better to increase opportunity for small business; attract more rate paying citizens to live in the area; and make it easier for local citizens to access economic opportunity (Swartland Municipality, 2020).

2.4.5. Challenges faced by the community and key focus areas

According to the latest Annual Report for the Swartland Municipality, the key challenges facing the municipality include: the increase of informal settlements and the provision of basic service delivery to these areas because they were inaccessible or situated too far from bulk infrastructure services to be connected; sufficient funding for the maintenance of roads; poor conditions of drainage pipes which sometimes hinder storm water drainage; disaster management capabilities as there are no dedicated staff responsible for disaster management; and limited funds for the supervision of sports facilities and public swimming pools as vandalism is an ongoing concern. Additionally, the cost of operating and maintaining sports facilities in rural areas is a challenge as they do not generate enough income to cover these expenses and thus funds need to come from public revenue sources (Swartland Municipality, 2020)

2.4.6. Social development

The Swartland Social Development Policy and Strategy was approved in 2017 and through thorough engagement and research settled on five key focus areas:

- Co-ordination of and collaboration within the social development sector
- Establishing child facilities/ Promoting child development
- Facilitating access to the economy
- Lobbying for the vulnerable
- Promoting youth development (Swartland Municipality, 2017).

The municipality identified that by working with different stakeholders in addressing the social development needs of the community, the overall wellbeing could be positively impacted as measured by an increase in the Human Development Index (Swartland Municipality, 2017).

2.5. LOCAL ECONOMIC DEVELOPMENT AND COMMUNITY DEVELOPMENT

For local economic development to be successful, participation is needed from all actors including community members to ensure that development is sustainable and meets the needs of the community.

In many developing countries, persistent structural inequities, market imperfections and varying levels of state effectiveness have undermined the effectiveness of social policy (International Bank for Reconstruction and Development / World Bank, 2010). Thus, in order to achieve development objectives, "social policy needs to move beyond conventional social service approaches toward development's goals of equitable opportunity and social justice" (International Bank for Reconstruction and Development / World Bank, 2010).

The White Paper on Local Government (Cooperative Governance Traditional Affairs [COGTA], 1998) states developmental local government should exercise municipal powers and functions in a manner which "maximises their impact on social development and economic growth; playing an integrating and coordinating role to ensure alignment between public (including all spheres of government) and private investment within the municipal area; democratising development; and building social capital through providing community leadership and vision, and seeking to empower marginalised and excluded groups within the community" (COGTA, 1998). This includes the creation of liveable integrated towns and cities that promote community empowerment and local economic development (COGTA, 1998).

According to Nel and Rogerson (2016), two of the most widely documented challenges to local economic development are the lack of capacity and officials trained in local economic

development with a focus on inadequate levels of knowledge thereof and a lack of understanding of local economy dynamics (Nel & Rogerson, 2016).

This issue of capacity has also been highlighted by other authors who find that capacity issues within municipalities in South Africa have resulted in ineffective implementation of local economic development interventions to address socio-economic issues despite being a tool for local government to address issues of poverty, community development, economic growth and unemployment (Khambule, 2019; Nel, Binns, & Bek, 2007).

To address this lack of understanding and capacity issues within local government, it is important to seek community input as to the most pressing needs of communities and how to best utilise resources to the benefit of the community. This is broadly referred to as community development.

The United Nations' (UN) broadly frames community development as, "a process where community members come together to take collective action and generate solutions to common problems" (McEwan, Mawdsley, Banks, & Scheyvens, 2017).

Looking more deeply, the UN Economic and Social Commission for Western Asia broadly defines community development "as an approach that gives control over planning decisions and investment resources to community groups and local governments. It operates on the principles of local empowerment, participatory governance, demand responsiveness, administrative autonomy, greater downward accountability and enhanced local capacity" (United Nations Economic and Social Commission for Western Asia, 2006).

The State Resource Center, Kerala, defines community development as "a process that seeks to strengthen and empower communities to develop their full potential. It seeks to equip individuals and groups of people with the skills they need to bring about progressive change in their own communities" (Swaraj, 2016).

According to Roodt (2001), "Community development is the conscious process wherein small, geographically contiguous communities are assisted by the more developed community to achieve improved standards of social and economic life."

While there is no one definition of community development, an assessment of the UN organisations, donors and NGOs shows some meaningful degree of community agency and

participation is a distinguishing trait of this mode of development (McEwan et al., 2017). The main aim of these participatory processes is for marginalised people to be more involved in making decisions so that both the relevance and sustainability of programmes are improved (Byrne & Sahay, 2007).

Local and community-driven development allows local governments and community affiliated groups to make decisions and allocate resources according to where they see a need (International Bank for Reconstruction and Development/World Bank, 2010; Schuftan, 1996) and thus is one of the most effective methods of promoting people's participation in deciding on their own development (Fonchingong & Fonjong, 2002). To minimise dependence on external agencies, community members must use their skills and knowledge to ensure they use the resources available to them to support basic needs – in other words, they must be self-reliant (Fonchingong & Fonjong, 2002; Roodt, 2001).

Such programmes have seen success globally and organisations such as the World Bank finance projects related to water and sanitation, food nutrition, education and others (International Bank for Reconstruction and Development / World Bank, 2010). However, a major challenge remains, how to scale this success nationally. Creating a community development framework can help to identify methods and strategies to address crucial problems and improve weak elements that affect efficiency (United Nations Economic and Social Commission for Western Asia, 2006).

In addition, the World Bank emphasises that community-driven development programmes operate on the principles of transparency, participation, accountability, and enhanced local capacity (World Bank, 2020). Based on the World Bank's experience, when poor communities are given access to information, clear and transparent rules, and proper technical and financial support they are able to successfully organise and identify priorities within the community to address local problems by working with local governments and other institutions (World Bank, 2020).

As referenced specifically to the REIPPPP by Baker and Wlokas (2015) above, a common key criticism within the literature regarding the community development is the definition of 'communities' because of the inherent complexities of both social and geographic boundaries, varying interests and memberships, migration and movement, amongst other things (McEwan et al., 2017; Kapelus, 2002; Muthuri, Moon, & Idemudia, 2012).

2.5.1. Participatory development

Participatory development is "a process of taking into account people's agency in development by involving them in decision making over planning processes that affect their lives" (Acre & Fisher, 2018). This moves away from the traditional top-down approach of development and allows for the integration of different forms of knowledge (Acre & Fisher, 2018).

Participatory development emerged out of the recognition that development activities from the top down were ineffective (Cooke & Kothari, 2001). It was in the 1980s that a consensus seemed to emerge "that smaller-scale organisations with relative autonomy from the government were better placed to operationalise what came to be known as 'people's participation'" (Cornwall, 2006) (Muthuri et al., 2012). However, this idea was not based on empirical evidence but rather a leap of faith (Cornwall, 2006).

The subsequent proliferation of non-governmental organisations in the areas of health, education and credit services to the rural poor was made possible by donor funding as these entities were deemed better fit (less bureaucratic, more cost-effective, more participatory and better able to reach poor and disadvantaged people) (Cornwall, 2006). NGOs were increasingly instrumental in service delivery (Cornwall, 2006; Robinson & White, 1997).

Participation has become something that one cannot possibly oppose as it promises to give the 'poor' a voice and a choice and is a key component of effective development interventions and policies – it has developed the rank of development orthodoxy according to Cornwall (2006) and is seen as a solution to problems that rural communities face globally (Molosi-France & Dipholo, 2019).

Cornwall (2006) pointed out that participation is "an infinitely malleable term" and "can be used to evoke and to signify almost anything that involves people", a sentiment echoed in the literature (Kapelus, 2002; Kumi, Yeboah, & Ankomah Kumi, 2020; Van Zanten & Van Tulder, 2018). Thus, it can be misused and framed to meet various objectives, not necessarily to the benefit of the community. In reference to urban expansion, Rico (2013) further posited that the meaning of participation becomes distorted, resulting in top-down approaches to development and manipulation of communities, when there is a "failure of governments to foresee consequences of urban policy in weak economies". Cooke and Kothari (2001) argued that participatory methods can sometimes drive out other methods that have advantages over participation. They also questioned whether participation may override already existing

legitimate decision-making processes and if such group dynamics merely reinforce the interests of the already powerful (Cooke & Kothari, 2001).

However, there is evidence that participative processes can be the catalyst for integral development across the city (Rico, 2013). In a study of the Grassfields of Cameroon, Fonchingong and Fonjong (2002) found that in the case of community participation, self-reliant development organisations were the most important agents of development. These organisations are well structured along village and cultural lines and facilitate projects such as community halls, water projects and water schemes and micro-development projects such as the building of bridges and construction of culverts. They believe that it is possible to use the same approach to create a standard intervention in microfinancing development projects in rural areas (Fonchingong & Fonjong, 2002).

In South Africa specifically, Nel et al. (2007) investigated community-based development processes in rooibos tea production in the Cedarberg region of the Western Cape. According to their study, the success of these projects was a combination of NGO support, local skills and social capital, which resulted in substantial economic and social development in the communities studied (Nel et al., 2007).

In their study they found that the NGOs had an acute awareness of engaging and then disengaging with communities at a fitting point in the development cycle (Nel et al., 2007). As pointed out by Nel, Binns and Motteux (2000), this is a very important factor in initiatives that involve NGOs as ongoing dependency can become an issue (Nel et al., 2000).

According to Roodt (2001), participation is viewed as one of the elements needed to encourage sustained development, but sustained development requires more than this. An integrated and coherent state policy at every level as well as involvement of the NGOs and the private sector is also very important along with adequate service delivery, finance and management (Roodt, 2001).

Participation from society in general is needed to truly achieve ethical development and this means that a combination of private sector growth and equitable distribution of the accrued wealth for the development of the rural sectors is needed (Silvia & Choudhury, 2006).

According to Cornwall (2006), the ideal of participation needs to be better scrutinised in terms of the actual project of ‘development’ and whether such a practice and project can create

meaningful participation by communities that result in decisions that positively affect their lives.

Major shifts in policy related to economic growth in SA shows that there is an increased focus on interactions between rural residents and the private sector (Ashley & Wolmer, 2003).

2.5.2. Private sector involvement

Those responsible for development within countries and communities are increasingly looking to the private sector as a key partner in achieving sustainable development goals as it comes with much needed resources such as expertise, innovation and finance (Di Bella, Grant, Kindornay, & Tissot, 2013).

The United Nations Global Compact (hereafter, the Compact) White Paper asserts that "a new paradigm in development thinking is recognising the centrality of private enterprise in pursuit of the development agenda and vice versa" (Kumi et al., 2020) and highlights that to drive sustainable growth, protect the planet and eliminate poverty, private sector participation through public-private collaborations and strategic partnerships is very important (Kumi et al., 2020).

In many developing countries there is a need for capital investment into areas such as service delivery and infrastructure development but official development assistance is decreasing and this is part of the reason for the greater emphasis on the private sector. The private sector is encouraged to get involved through their CSR initiatives or other development initiatives (Kumi et al., 2020).

According to Van Zanten and Van Tulder (2018), it is possible that the private sector, by developing sustainable and inclusive business models, has the capacity to reduce social inequalities (Kumi et al., 2020). These models and initiatives often develop for very different reasons with different tools and varying goals.

Many private sector organisations are choosing to develop sustainable development models that contribute to development while maximising profit as there is a convergence between their business interests and development priorities (Di Bella et al., 2013; Muthuri et al., 2012).

Kapelus (2002) and Muthuri et al. (2012) argue that many companies try to offset other criticisms and resistance by investing in community development programmes. They make the

point that companies need to better their reputation by increasing goodwill and legitimacy within local communities in order to continue operating. They do this by investing in initiatives related to healthcare, education, infrastructure development and economic welfare, amongst other things (Muthuri et al., 2012; Kapelus, 2002).

Regardless of the reasons for investing it is increasingly being accepted that the private sector can also contribute to mainstream national development through job creation and employment, equity financing, contribution to national income, tax revenues, delivery of critical goods and services, royalties, efficient flow of capital for production as well various social interventions through their CSR initiatives (Kumi et al., 2020; Benshaul-Tolonen, Chuhan-Pole, Dabalen, & Kotsadam, 2019; Kapelus, 2002; Yakoleva, Kotilainen, & Maija, 2017).

But the reliance of the public sector on private sector finance, resources, innovation, efficiency and skills to develop sustainable built environments has been noted as problematic by a range of authors due to the less than optimal sustainable performances (Moore & Bunce, 2009; Koppenjan & Ensenrink, 2009).

In their analysis of PPPs in urban sustainable development Koppenjan and Ensenrink (2009) find three major challenges: finding the correct balance between the willingness of private sector parties to invest and government's focus on environmentally, financially and socially sustainable public urban infrastructures (convince the private sector to focus on the long-term perspective needed to achieve sustainability targets rather than short-term return on investment); finding incentives that have a balance between economic and sustainability goals in the private sector ; and creating sound institutional frameworks that encompass environmental, social, financial and economic regulatory regimes (Koppenjan & Ensenrink, 2009).

Kapelus (2002) found that the subjectivity in defining community also means that companies can define the term differently depending on their interests. Further, Kapelus (2002) found that while global mining company Rio Tinto allows for some flexibility in defining communities which could, in principle, allow for a wide range of stakeholder obligations, in the case of its subsidiary, Richards Bay Minerals, the company defines community in a way that tends to restrict the organisation's obligations (Kapelus, 2002).

In their research into why the private sector is investing in various CSR initiatives, Ashley and Wolmer (2003) found that the range of motives include: promoting long-term interests, gaining

market advantage and responding to a wider CSR agenda, especially in countries such as South Africa where there is a widespread belief that business should be contributing to development. They noted that these initiatives generally have a low financial burden on companies with the main resources needed being staff and time to effectively implement the initiatives (Ashley & Wolmer, 2003).

Additionally, Kumi et al. (2020) found that CSR initiatives are usually of a short-term nature based on financial business models and are not intended to be long-term sustainable investments in communities. In their study of telecommunications and mining companies in Ghana, Kumi et al. (2020) found that their CSR initiatives were based mostly on profit and anything that could cause a loss in profit was heavily opposed. These misplaced priorities coupled with the little to no community involvement in the design of the project and implementation partly explains why CSR initiatives are unable to result in the promised changes in the lives of beneficiaries (Kumi et al., 2020).

For the majority of companies, strategies towards sustainability challenges are reactive and they use their "CSR/sustainability strategy as window dressing or greenwashing" (Van Zanten & Van Tulder, 2018). This voluntary nature of CSR has led to governments increasingly developing regulatory policies, directed at companies, to provide environmental and social protection (Van Zanten & Van Tulder, 2018; Kapelus, 2002), for example, the UN and International Labour Organization (ILO) conventions on human rights and labour conditions (Van Zanten & Van Tulder, 2018).

When developing CSR initiatives, companies hire a range of experts such as health professionals and development workers to help them implement their initiatives. But many also fail to forget to hire media agencies to help them publicise the 'good' work that they are doing and thus CSR has become a business in its own right (Kapelus, 2002).

However, Kapelus (2002) pointed out that the increasing role of the private sector in economic and social development may legitimise government cutbacks in areas they have traditionally been responsible for such as service delivery.

And while the benefits of private sector participation in development are many, it is noted that to achieve real systemic change government participation is needed (Roodt, 2001).

2.6. EMPIRICAL LITERATURE: BENEFITS OF RENEWABLE ENERGY PRODUCTION

Renewable energy is purported as a sustainable energy source that can help countries to reduce their carbon emissions by moving away from traditional coal-powered energy production as well as help alleviate the reliance on biomass in lower-income areas.

Mandelli, Barbieri, Mattarolo and Colombo (2014) argued that the potential of renewable energy is boundless, and it could meet the energy demand of the world many times over. With the prices of solar and wind power systems declining substantially, compared to the fluctuating price of oil and gas, a transition to renewable energy is becoming increasingly likely, according to Akella, Saini, and Sharma (2009), and Van der Schoor and Scholtens (2015).

Additionally, there are number of empirical studies that have analysed the causal relationship between economic growth and the consumption of renewable energy (Apergis & Payne, 2010; Sadorsky, 2009). Other papers have analysed the causal relationship between economic growth, renewable energy consumption and CO_2 emissions (Sadorsky, 2009; Bose, 2013; Ben Aïssa, Ben Jebli, & Ben Youssef, 2014). This includes the implications renewable energy programmes can have on sustainable community development.

2.6.1. Energy-specific benefits of renewable energy

The OECD argues that renewable energy has the potential to reduce the "fuel poverty" – a common feature of remote regions – by providing isolated communities with the ability to produce their own energy instead of importing expensive conventional fuels (OECD, 2012).

Renewable energy can take various forms and there are studies that agree that off-grid, renewable energy solutions offer an alternative, at times the only possible one, to grid-connected services (Cherni & Hill, 2009; Szabó, Bódis, Huld, & Moner-Girona, 2011).

This idea is supported by the fact that many a time it is not very profitable for utilities to meet the electricity needs of the poor as extensions to the electricity grid can be expensive (Bazilian et al., 2012). Szabó et al. (2011) argue that in SSA, under certain circumstances, grid-extension, stand alone systems or mini-grids may be more economical. Where there is substantial underdevelopment of the grid infrastructure, mini-grids connected to local renewable resources may be the most affordable option as the cost of grid building can be excessive if the expected electricity load is relatively low (Szabó et al., 2011).

It is, however, interesting to note that some of the renewable energy technologies are significantly more productive on the African continent than in regions where renewable energy is significant in the national energy mix; for example, the same photovoltaic panel can on average produce twice as much electricity in countries in Africa than in those in Central Europe (Szabó et al., 2011).

In 2017, Rwanda's off-grid power generation was 8.75MW with the government increasingly looking towards off-grid solutions as a fast and robust way to meet the country's energy needs. Kenya added 1.3 million households to the electricity grid in 2016, going from a percentage of 27 percent in 2013 to 55 percent. It planned to have 95 percent of homes connected by 2020. Most of Kenya's energy comes from non-fossil fuel sources with 60 percent of installed capacity coming from hydro and geothermal power (Burger, 2017).

Small scale solar power is making a significant difference to the lives of poor individuals in countries such as Bangladesh and Mongolia. Low-cost solar systems are helping to light their homes; as part of the government of Bangladesh' sustainable development strategy which has installed over 3.5 million solar home systems creating 70,000 direct jobs (Kyte, 2015).

In Ethiopia the renewable energy sector has continued to grow over the last ten years which has led to profitable industries and new infrastructure. Fellow country, Morocco, imports about 96 percent of its energy needs and has thus placed significant emphasis on renewable energy as an alternative energy source (Bouhal et al., 2018). In 2017 it commissioned the first phase of its solar plant, Noor 1, which is estimated to provide 1.1 million people with electricity at full capacity (Burger, 2017).

In Central Africa the Grand Inga project, which is a multi-phase hydro power station, will be built on the Congo River which has the potential to generate around 44GW which equates to half of the African continent's current installed electricity capacity (Burger, 2017).

A remote village in Cuba, Manantiales, is mostly separated from the mainland by the Hanabanilla lake, a large reservoir created to service a large hydro-electric plant. The plant is fully operational and the reservoir is used for recreational purposes, water supply, irrigation, and also as a waterway giving isolated populations access to the rest of the country. The households within the community are connected to a localised grid and have access to electricity produced from the micro-hydro plant (Cherni & Hill, 2009).

Before the installation of the micro-hydro plant in Manantiales, electricity was generated by a diesel generator set, which the government had installed and maintained. However, the generator set was reportedly unreliable because of few spare parts and the erratic fuel supply which resulted in a limited power generation of four hours per day and two hours on Sundays, when households would iron for the week (Cherni & Hill, 2009).

These initiatives show that renewable energy has the potential to significantly reduce the energy deficit in developing countries. The number of cities that are powered by a minimum of 70 percent renewable energy grew from 42 to 101 between 2015 and 2017 and includes cities such as Auckland, Brasilia, Nairobi and Oslo (REN21, 2018). In 2017, around 17 countries produced more than 90 percent of their electricity from renewable sources, mainly hydropower; however, wind power plays a significant role in Uruguay, Costa Rica and Ethiopia (REN21, 2018).

There are also various international players working to improve access to energy using renewable sources. Power Africa, a US Government-led initiative involving PPPs for the development of the energy sector on the African continent (Power Africa, 2017), has reportedly continued to advance off-grid access and by mid-2017 had achieved 10.6 million connections delivered mainly by pico solar systems and a small number of mini-grids (REN21, 2018). The joint IFC-World Bank Lighting Africa project is also a non-profit organisation that aims to enable access to off-grid lighting and energy products by 2030 for more than 250 million people in sub-Saharan Africa (Lighting Africa, 2019).

While such projects appear to be reducing the energy deficit on the African continent, they do have their drawbacks. Baptista and Plananska (2017) studied the top six flagship energy initiatives in SSA based on available online data. Through their analysis they found that the initiatives are generally aligned with market creation and technology fixes, which, however, only partially consider the social aspect associated with it. They argued that the "blank-slate" approach will continue to result in implementation inefficiencies, particularly in capital investments – thereby limiting the initiatives' ability to enable access to modern energy for the people of SSA.

Quitzow et al. (2016) also highlighted the tendency of a neglect of Central Africa across several initiatives on the continent which could lead to asymmetrical energy development on the

continent. They also found that most initiatives focus on engaging with national actors rather than local actors on the ground (Quitzow et al., 2016).

REN21 supports this in its report that shows overall growth in renewable power capacity is limited to only certain countries in Africa. Non-hydropower renewable power capacity in the region also only grew by an estimated nine percent overall in 2017 (REN21, 2018).

The OECD (2012) finds that although the electricity grid is a fundamental factor in a rural area's ability to benefit from renewable energy, in many cases there is no co-ordination between renewable energy deployment and grid improvements. As distribution and transmission are still designed to transmit electricity by a few large centralised power plants, they cannot accommodate localised and small-scale generation, thus limiting renewable energy even in areas rich in renewable energy potential. Thus, areas already specialised in power generation may be advantaged in terms of renewable energy development (OECD, 2012).

Multilateral organisations such as the World Bank are continuously investing in renewable energy as opposed to traditional fossil fuel energy generation plants (REN21, 2017). However, sometimes there can be fragmentation and overlap between policies of government, international organisations, NGOs and others that then lead to a lack of harmonisation and inefficiency (Mandelli et al., 2014).

In order for policies to effectively lead to development, three areas need to be addressed, "(i) to acquire a picture of the local current energy situation, (ii) to measure the state of development and the progress towards a sustainable energy system, and (iii) to have energy decision- and policy-makers fully aware of the implications on sustainable development of selected policies" (Mandelli et al., 2014).

The high costs associated with installation can also potentially restrict access and make renewable energy an unaffordable option for poor communities (Reddy & Painuly, 2004). The initial costs of renewable energy technologies are generally more expensive than traditional forms and consumers are therefore reluctant to make a purchase as they do not consider the operating costs, which over time are lower for renewable energy technologies. This is known as the first cost bias which is aggravated by the fact that low-income consumers do not have access to cash and/or credit (Reddy & Painuly, 2004).

2.6.2. Socio-economic benefits of renewable energy

There are number of empirical studies that have analysed the causal relationship between economic growth and the consumption of renewable energy (Apergis & Payne, 2010; Sadorsky, 2009). Other papers have analysed the causal relationship between economic growth, renewable energy consumption and CO_2 emissions (Sadorsky, 2009; Bose, 2013; Ben Aïssa et al., 2014).

Most studies, however, agree that household survival is dependent on energy provision as it is required for food production, sanitation facilities, shelter, heating, and education and health services (International Energy Association [IEA], 2017). A lack of access to modern electricity can trap people and hamper economic growth as communities are unable to use many tools and appliances which are considered necessary to achieve a higher standard of living (Cherni & Hill, 2009).

In their study of a number of Central American countries, Apergis and Payne (2010) examined the relationship between renewable energy consumption and economic growth and found that there is a long-run relationship between renewable energy consumption, economic growth, real gross fixed capital formation and the labour force. Mathiesen, Lund and Karlsson (2011) also argued that the positive economic effects of employment creation and large earnings on exports are possible through the implementation of renewable energy policies and more efficient conversion technologies.

However, Chang, Huang and Lee (2009) found that there is no direct relationship between economic growth and renewable energy sources' consumption.

For the potential of renewable energy technologies to be realised on the continent, much training and skills development is needed. Government participation and support through institutional and political frameworks are critical for the successful implementation of sustainable renewable technologies on the continent (Barry, Steyn, & Brent, 2011). Climate policies alone are not enough to promote renewable energy (Intergovernmental Panel on Climate Change [IPCC], 2012). Communities also need to see the benefits associated with the use of renewable energy sources other than electricity. For example, when the government of Cuba created the hydropower plant in Manantiales, a by-product of the construction was the improvement and construction of roads in the area, connecting the community with the rest of the country (Cherni & Hill, 2009).

The OECD reports that the overall impact of economic growth from renewable energy is much lower than expected. Reasons include national and regional energy policies with ambitious targets and high incentives for renewable energy production have led to distortions. Additionally, renewable energy installations may compete with agriculture and tourism for the use of land and renewable energy incentives have triggered rent-seeking behaviours. Thus, many local communities have started to oppose continued renewable energy development in their communities (OECD, 2012).

Deployment also increases the tax base in rural host communities and generates extra income for landowners and land-based activities. Developers are sometimes required to pay tax to the host community as well which increases revenue and can have a substantial impact on service delivery (OECD, 2012).

Having greater economic activity in a variety of sectors helps to strengthen the overall economy as there are more ways to generate revenues. Thus, investment in renewable energy can help diversify an economy; there can be various sources along a range of technologies depending on what resources are available, rather than depending on a single source of energy supply (Akella et al., 2009).

However, without the proper safety nets, the deployment of relatively high-cost renewable energy projects can negatively affect low-income citizens. If the higher costs of renewable energy are blended into the market prices for energy, as is the case with feed-in tariffs, then the cost of energy overall increases (OECD, 2012).

Mandelli et al. (2014) posit that energy access provided by mainly renewable energy may have a direct impact on human development and capacity building as these are key to developing other sectors. Renewable energy technologies can act as a stimulus for the education sector as training is required at different levels, and communication skills and research and innovation are expanded (Sovacool, 2012). These coupled with the potential of job creation can also make community acceptance of projects easier which in turn could make future projects easier to develop (Mandelli et al., 2014).

A potential drawback is that if the government chooses to subsidise the production of renewable energy there will be less revenue available for other avenues such as education, healthcare and service delivery and the poor end up spending a larger portion of their income on energy (OECD, 2012).

The REIPPPP in South Africa, however, is unique with its socio-economic development requirements which mandates that companies' operations benefit the host community. The programme is seen as a benchmark globally (Eberhard & Naude, 2017). Based on the empirical evidence, the conceptual framework that informed this dissertation is illustrated in Figure 1 below.

2.6.3. Conceptual framework

The framework below outlines the relationship between the constructs explicated in the above literature review. South Africa has extremely high levels of poverty. To counter this, the government developed the NDP 2030 with the aim of eliminating income poverty and reducing inequality. For these goals to be realised, however, a number of actions would need to be taken, including increasing ownership of assets by black South Africans and ensuring access to clean sustainable energy. In addition, the country aims to reduce its carbon emissions to align with international statutory requirements, which coal's dominance of South Africa's energy supply sector makes difficult. Given coals culpability for high levels of carbon emissions the country investigated the use of renewable energy.

Throughout the world, renewable energy has demonstrated many potential benefits including economically and socially. To achieve these benefits, including the upliftment of communities, community participation was found to be key to success. This is mainly possible through local and community development as discussed above.

The implementation of the REIPPPP provided an opportunity for government to increase ownership of assets within local communities through community trusts and local ownership by encouraging private investment into these communities. This investment would lead to the development of communities in terms of education, housing and entrepreneurship.

2.7. CHAPTER CONCLUSION

From the empirical literature it is clear that inequality and poverty levels in South Africa are high and that the private sector plays a pivotal role in reducing these levels by working alongside the government. Additionally, involving communities in the decision-making process ensures the needs of communities are better addressed. The REIPPPP, via its socio-economic bid requirement, allows for this kind of collaboration in addressing the needs of the community as seen by various renewable energy projects globally.

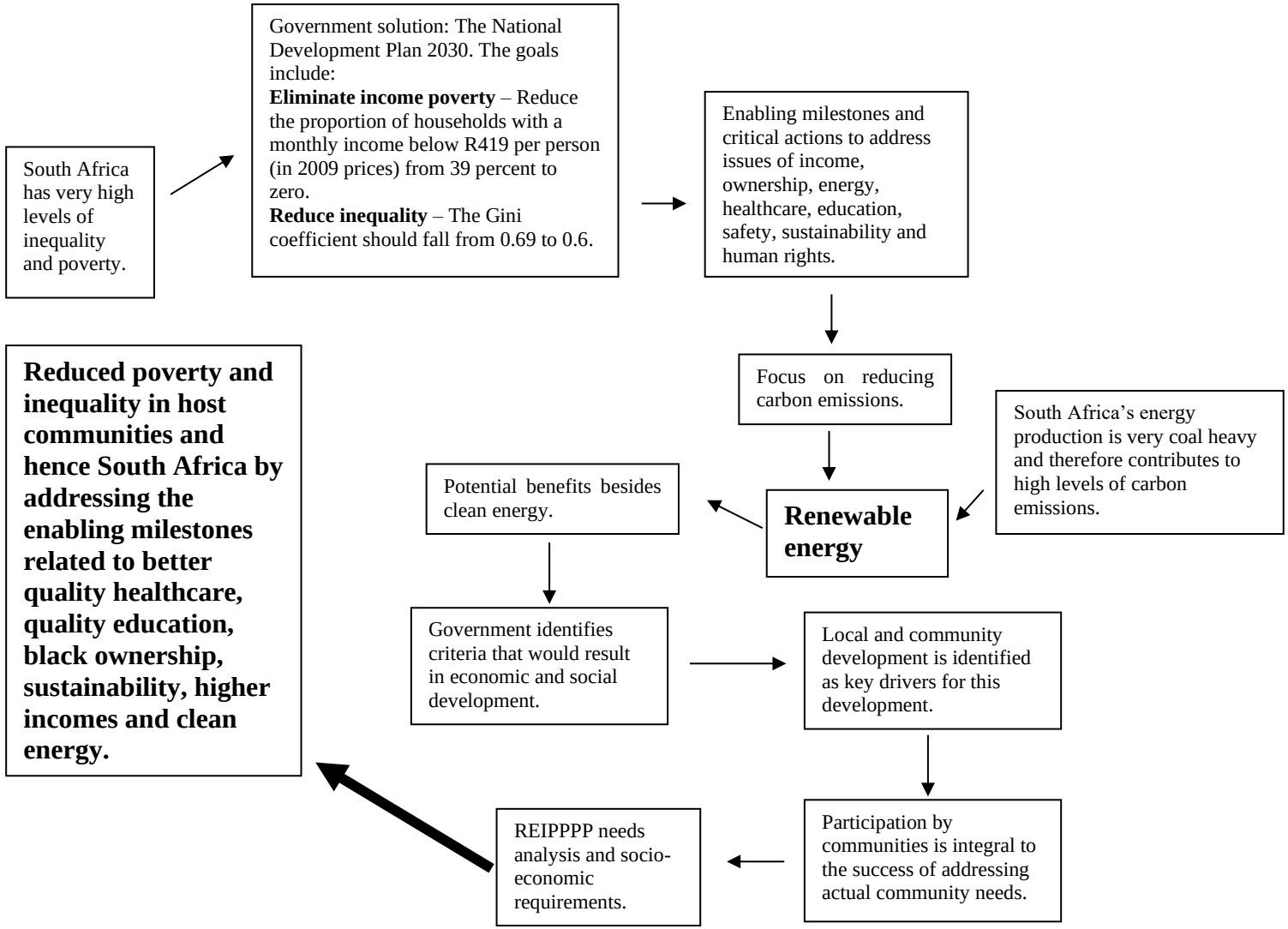

Figure 1: Conceptual framework that supports the study (*Source: Author's own compilation*)

CHAPTER 3
METHODOLOGY

3.1. INTRODUCTION

This chapter discusses the research approach used to conduct the study. It explains the research design in terms of population and sampling. It also focuses on how the data was collected, coded and analysed in order to develop concrete and constructive conclusions.

3.2. RESEARCH APPROACH

This study made use of qualitative scientific methods to gather data and draw conclusions as the study was exploratory in nature. Qualitative research focuses on understanding and interpretation. It starts off with acknowledging that there are different ways to understanding the world and concerns itself with discovering the meanings and experiences from those who are being researched rather than that of the researcher (Jones, 1995). The aim of qualitative research is to describe and clarify lived experiences (Polkinghorne, 2005). It is best used for exploratory research when researchers aim to understand the "how" rather than merely testing statistical variables (Creswell, 2012).

Data is primarily gathered in the form of written or spoken language and not numbers (Polkinghorne, 2005). According to Creswell (2012), the various approaches to qualitative data can "be organised under five different traditions: biography, phenomenology, grounded theory, ethnography, and case study." These are not mutually exclusive.

Of the five qualitative research approaches available, a phenomenological research approach was used as this study aimed to discover the effects of a phenomenon – the REIPPPP – on a community. The fundamental goal of phenomenological research is to describe the nature of a particular phenomenon. Most often, phenomenological research involves interviews to determine experiences due to a particular phenomenon. This was used in conjunction with a case study approach.

Due to the open and emergent nature of qualitative research, there is a lack of standardisation as there are no clear criteria coupled with neat and concise research steps. However, the openness allows for understanding, although also an ambiguity that can sometimes be overwhelming but at the same time allows the researcher to approach the underlying intricacies

in order to honour complexity. For this to be done well, researchers must ensure that they avoid simplifying the social phenomena but rather explore the range of behaviours (Glesne, 2006).

This study aimed to explored *how* the presence of the REIPPPP project company in its host community affects the lives of the community members, their experiences and insights. Thus, a qualitative research approach was best suited to this study. Also, as the aim was not to make a blanket statistical generalisation, neither the input-output or analytic process model in their current and full forms presented in the literature are applicable.

3.3. RESEARCH DESIGN

3.3.1. Population and sampling frame and technique

The process of selecting participants for a study from the entire population is referred to as sampling. This process involves various decisions in terms of settings, people, behaviours and events (Bryman & Bell, 2007).

As the focus of quantitative (statistical) and qualitative research differs, the process of selecting data sources differs too. Because the focus of statistical data is to make claims about a population based on a selected sample of that specific population, it requires a selection that is representative of the population (Polkinghorne, 2005). Qualitative research, however, attempts to describe, understand and clarify the human experience through study and therefore requires fuller descriptions of experiences (Polkinghorne, 2005).

The sampling technique is also important as it helps lend credibility to a study. There are two main types of sampling techniques, probability and non-probability sampling (Malhotra, 2010). Probability sampling in a study involves giving equal opportunity of being selected to every individual in a population. (Malhotra, 2010). These methods include random sampling, cluster, stratified and systematic sampling which in many cases are used in research studies following a quantitative or mixed research approach (Malhotra, 2010).

Non-probability sampling is more focused on specific participants and thus not everyone in a population has the same opportunity of being chosen to participate. As the goal of qualitative research is to enhance the understanding of an experience, selections are purposeful and not left to chance (Polkinghorne, 2005). Different methods include convenience, purposeful, and quota sampling (Naderifar, Goli, & Ghaljaie, 2017).

Given this study investigated a specific 'phenomenon' and the impact on the lived experience of individuals, non-probability sampling techniques were used, specifically convenience sampling.

The convenience sampling method includes members of the population who are available to the researcher (Naderifar et al., 2017). It is the least expensive and least time-consuming sampling technique available and was appropriate for this study which was exploratory in nature and aimed to develop insights and ideas around social development in the communities in which REIPPPP projects operate. Convenience sampling does have its drawbacks in that generalisations should not be made; however, that was not the aim of this study.

The target population in this study comprised the host communities of the REIPPPP projects that were fully operational in South Africa at the time of the study. The REIPPPP projects operational in the Western Cape at the time of data collection are listed in Table 5.

Table 5: List of REIPPPP projects fully operational in the Western Cape at the time of data collection

Name	Technology	Capacity	Nearest town
Aurora	Solar Photovoltaic (PV)	10.35	Aurora
Darling Wind Farm	Onshore Wind	5.2	Yzerfontein
Dassiesklip Wind Energy Facility	Onshore Wind	26.2	Caledon
Electra Capital – Paleisheuwel Solar Park	Solar Photovoltaic (PV)	75	Clanwilliam
Eskom Sere Wind Farm	Onshore Wind	100	Koekenaap
Gouda Wind Facility	Onshore Wind	135.2	Gouda
Hopefield Wind Farm	Onshore Wind	65.4	Hopefield
SlimSun Swartland Solar Park	Solar Photovoltaic (PV)	5	Swartland
Touwsrivier Project	Solar Photovoltaic (PV)	36	Touwsrivier
Vredendal	Solar Photovoltaic (PV)	8.8	Vredendal
West Coast 1	Onshore Wind	90.8	Vredenburg

Source: Energy blog (2021)

The list of REIPPPP projects in the Western Cape was easily accessible on the internet and thus the researcher used a systematic approach of finding contact details for each project company. This proved to be difficult for some as the project company name did not necessarily reflect the owners of the project.

Emails were sent directly to a few of the project companies operating in the Western Cape and others were contacted via their websites. Initially, the researcher received a positive response from one project company; however, when she needed to arrange a time for the interview, it fell through. The researcher then began to email municipalities where the project companies operate and she employed a snowball sampling technique by which participants are identified via recommendation from others. The researcher received a positive response from the Theewaterskloof municipality who put her in contact with the owner of SlimSun. The owner of SlimSun then put the researcher in contact with the relevant representatives from the company who would be able to assist in the research.

Further, the representatives from the project company SlimSun then put the researcher in contact with a representative of the Swartland Solar Community Trust.

Lastly, through conversation with the project company, the researcher identified a theme in relation to community work within the Swartland Municipality and also identified a relevant NGO to interview. Contact was made via details on the website and interviews arranged.

Interviews were conducted with two representatives from the project company SlimSun, a representative from the Swartland Municipality, a representative from the Swartland Solar Community Trust and a representative from a well-known local NGO operating in the Swartland area where SlimSun operates.

Originally the sample that was to be studied was two of the REIPPPP projects fully operational in the Western Cape and their respective host communities (see Appendix 2). However, due to time constraints and the lack of positive responses received, the decision was made to focus solely on SlimSun and the impact it has had on its host community as it was not the purpose of this exploratory study to make broad generalisations.

3.3.2. Case study approach

Case study research is used to scientifically investigate real-life phenomena (Ridder, 2017). According to Thomas (2011), a case study method is an analysis of systems that are studied

using either one or a variety of methods to develop a comprehensive view. Yin (2009) defines a case study as "an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" and argues that they can be exploratory, descriptive, and/or explanatory in nature.

According to Dyer and Wilkins (1991), the purpose of a case study "lies in the careful study of a single case to identify new relationships". They believe that because of this, single case studies are better able to create high-quality theory (Dyer and Wilkins, 1991). However, Eisenhardt (1991) argues that multiple cases allow for replication and provides a basis for corroboration. Gerring (2004) also argues that multiple case studies allow for greater representation and generalisability. According to Ridder (2017) in a single case study the aim is to develop good stories while the aim of using multiple case studies is the development of good constructs and their relationships.

Cousin (2005), as Dyer and Wilkens, argues that a single case study is used to explore situations to better understand a particular case and according to Gustafsson (2007) this allows the researcher to question old theoretical relationships and explore new ones, which allows for a more careful study to be undertaken. This idea is supported by Siggelkow (2007) who argues that single case studies can describe the existence of phenomena well.

Single case studies are also less expensive and less time-consuming than multiple case studies (Baxter and Jack, 2008).

When using a single case study, the researcher aims to study a single thing, which for this paper is the impact of SlimSun on the Swartland communities.

3.3.3. Data collection

Data collection in qualitative research supports and provides evidence of the experience that is being investigated through the lived experience of participants. This data is important as it forms the basis of the findings that are made in qualitative research (Polkinghorne, 2005).

Data collection involves sourcing the information and data that will be analysed to inform research questions or hypotheses. Data can be primary – this data is collected directly from a source such as through interviews and questionnaires – or secondary – this data is found via sources other than the study participants such as previous research, internet sources,

documentation from archives or participants. In order to gain a more holistic view of the situation, both primary and secondary data was used in this study.

This study made use of multiple methods for data collection including interviews and document collection.

Interviews: By means of interviews, the researcher explored individual perceptions and experiences following the arrival of the REIPPPP project. There are three types of interviews in research, structured, semi-structured and unstructured interviews (Creswell, 2012). A structured interview involves participants all being asked the same questions within the same context and questioning. Semi-structured interviews follow the same general line of questioning but allow for changes based on the context and participant. Unstructured interviews are tailored specifically for each participant at the discretion of the interviewer (Creswell, 2012). This study used semi-structured interviews as it aimed to gather information on the same 'phenomena', the operation of SlimSun, but from the perspective of different stakeholders who are affected in different ways. The general line of questioning is available in Appendices 4–7.

The interviews, which were conducted between August and October 2020, with the two representatives from the project company SlimSun, a representative from the Swartland municipality, a representative from the Swartland Solar Community Trust and a local NGO were all recorded, with permission, and transcribed. Ethical clearance was received on 14 November 2019 before any respondents were contacted.

Document collection: There is various information on the Swartland Municipality and the REIPPPP projects available online and these were researched extensively for context and to corroborate information gathered from the interviewees. Interviewees also shared information such as newsletters and financial and demographic information on projects that were used to inform the analysis of this case study. This lent more validity to the data collected from the interviewees and had the potential of adding another layer to what the impact may or may not be within the community.

Most of the time the evidence in qualitative research takes the form of written texts that are gathered from documents and then interviews collected in oral form and transcribed into written text for analysis. This evidence rather than being the actual marks on the paper, comprises the thoughts and ideas shared by the participant (Polkinghorne, 2005).

3.3.4. Data analysis

Thematic analysis was used to analyse the data. Once transcribed, the interviews were coded and separated into various troves of data to be further analysed to derive descriptions. The coding was done using NVivo software.

NVivo Data Management was used as a data management tool to help organise data. It provides a place to organise, store and retrieve the data and has advanced data management, query and visualisation tools, thus allowing for a more complex analysis.

The data was categorised, synthesised and searched for patterns which were then interpreted based on the literature already in existence (Glesne, 2006). This preparation of data ensured key themes were highlighted and important information could be found easily.

A memo writing technique was used to help the researcher develop thoughts cohesively, the technique involves jotting down thoughts as they occur. This helped to prevent losing critical thoughts that later could be relevant to the study (Glesne, 2006). Analytic files were kept and developed over time. Initially, files were categorised by the stakeholder constituency. They were then separated into background information and project examples. These were then further divided into separate information relevant to needs analyses and relationships with the community (including the local government) as this was a common thread throughout all the interviews. These were then further divided into who was involved in the various projects and reporting and evaluation.

Data collected was coded and examined on a regular basis rather than only at the end to ensure relevant content remained top of mind.

3.3.5. Reliability, validity and ethics

All efforts were made to ensure the reliability and validity of the research. Mainly, the researcher had no personal connection to either the project company, municipality, NGO or community trust interviewed to ensure objectivity in the study.

While the study focused on the experiences of members of the host community, it was important to hear from all major stakeholders in the project to create a fair and balanced description of the situation. Therefore, representatives from the project company, municipality, NGO and the community trust were interviewed. The questions posed to all interviewees were

structured around the same constructs to support consistency in questioning techniques. However, given their different roles, the semi-structured interview technique used allowed for certain specific areas to be interrogated more deeply.

All answers were recorded and transcribed by the researcher and notes taken throughout to ensure that no information was lost for analysis. All interviewees were asked if they were comfortable being recorded before the recording was done to ensure that rights and preferences were respected.

As it is not possible to directly observe experience, the data collected is dependent on what the participant chooses to share about their own experience and their ability to communicate this to the researcher. To mitigate this, the questions around the same constructs and important aspects of the REIPPPP were asked to all participants, namely around projects, needs analysis and impact on communities. Participants also made up a broad spectrum of stakeholders and not just the project company, which was planned to ensure that the study is not biased towards either party.

3.3.6. Limitations to methodology

Originally this study aimed to use a method commonly referred to in qualitative literature as *triangulation*. Triangulation is not used to simply combine different kinds of data but rather to relate them so as to improve the confidence in the research findings using three data collection techniques of interviewing, participant observation and document collection.

The plan was for the researcher to spend up to a week in the community observing the economic conditions and lives of community members; however, due to the COVID-19 pandemic this was not feasible due to health and safety risks and thus the participant observation was not possible. Instead, an interview with a representative from the Swartland Solar Community Trust and a local NGO was added to mitigate this and get more of a ‘community perspective’.

3.4. CHAPTER CONCLUSION

Due to the explorative nature of this paper, a qualitative methodology was the most suited to achieve the research objectives. Interviews with representatives from SlimSun, the Swartland Solar Community Trust, a local NGO and the Swartland Municipality were the main form of data collection because they provided insight and experiential knowledge of the topic at hand. Secondary data in the form of documents and websites were used to corroborate the

information that was collected and form greater insights. As discussed, participant observation was intended to be used as an additional form of data collection but was not possible due to the global pandemic.

CHAPTER 4
DISCUSSION OF FINDINGS

4.1. INTRODUCTION

This chapter explores the research objectives of this study and presents the findings related to the social and economic benefits of SlimSun in the Swartland Municipality to the community and how the company is perceived within the community.

4.2. DESCRIPTION OF PARTICIPANTS

Interviewees from four organisations were interviewed. Two representatives from SlimSun were interviewed to provide more context about the company operations and its community initiatives. The two company representatives interviewed are both integrally involved in the design and implementation of the initiatives. They liaise with beneficiaries and the local municipality.

The representative from the Swartland Solar Community Trust was interviewed as they have a community perspective given that their mandate is to benefit the community. The Trust is also independent of SlimSun and therefore it was an independent, alternative perspective.

The local government representative was an important person to engage with as the municipality is responsible for a range of socio-economic development initiatives and has a greater understanding of the needs of the community and the role of the various stakeholders within it. In this case, it applies specifically to the role SlimSun has played in socio-economic development within the community.

Lastly, in order to get a wider community perspective, a representative from one of the longest standing and most prominent NGOs within the municipality was interviewed. The NGO has extensive networks within the community and works with various players in uplifting the lives of those in need within the community. Their perspective in working with SlimSun and its impact is integral to understanding how SlimSun engages with and impacts the lives of the community.

Table 6: List of interviewees

Code	Organisation	Role area
SlimSun_Anon1	SlimSun	Finance
SlimSun_Anon2	SlimSun	Development
ComTrust_Anon1	Swartland Solar Community Trust	Board
Mun_Anon1	Swartland Municipality	Community Development
NGO_Anon1	Local NGO	Executive

4.3. SOCIO-ECONOMIC BENEFITS TO SWARTLAND COMMUNITY

Based on the thematic analysis of the interviews conducted, five key themes emerged regarding the socio-economic benefits experienced by the Swartland community, namely: the Swartland Solar Community Trust; education; food, nutrition and healthcare; and upliftment and dignity. The identified themes are discussed in this section.

4.3.1. Swartland Solar Community Trust

At least 2.5 percent of a project company must also be owned by the community. SlimSun has exceeded this requirement with the Swartland Solar Community Trust being a 20 percent equity partner with loan funding from the Industrial Development Corporation (IDC).

Local communities in the Western Cape hold six percent equity in the IPPs of BW1, BW2, BW3 and BW4 (IPP Office, 2020). This shows that the Swartland Solar Community Trust holds a much bigger share than similar trusts in the Western Cape, signalling the commitment of SlimSun to the community ownership requirement.

This was done to make it viable as shared by SlimSun_Anon1:

"…to make it viable, to make it economic viable to them. We had to give them a decent involvement in that. That was basically the reason and we also went for the community trust because again, our plan was that we could interlink the programmes because of the community trust…Sometimes there is a shortage of funds. But if we combine efforts we can do better. So that was the initial plan. We did not go for a BBBEE partner that is an industrial heavyweight somewhere just to tick all the boxes. We actually wanted to build that for the community to get the best benefit of the project [so] we went for community-based trust and to interlink with our own socio-economic development initiatives."

While formed as a result of SlimSun, the Swartland Solar Community Trust operates completely independently – though the two organisations will align their initiatives if possible – and has a board of trustees responsible for its operations. ComTrust_Anon1 shared that the formation of community trusts and other community ownership initiatives is not only beneficial to the host communities but also to project companies in the form of grants, loans and tax breaks from the government. While benefits accrue to both project company and the community, SlimSun's community ownership is still much higher than the average indicating a commitment to community upliftment.

While the Trust strives to take its directives from the community, at the moment it has few funds to distribute and thus the board did not want to create any expectation within the community as the benefits accrued to the community through the Trust are not immediate. The loan from the IDC needs to be paid back first. But they do receive requests through their community networks, particularly a board member who lives and works in the community and identifies potential projects. Com_Trust_Anon1 shared:

"For the first probably three, five years, 80 percent of the money that we get paid from Eskom, who's buying the power and for which we own 20 percent as a Community Trust. We only probably get about 20 percent of that money."

At the moment the Trust supports an ECD school in Darling working closely with the Darling Trust.

4.3.2. Education

Education has the potential to act as a catalyst to wider development and to transform lives as more education leads to faster growth economically, increases tolerance levels and better job opportunities (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020).

And while SlimSun is not able to invest in large infrastructure projects due to its size it is still committed to investing in ECD. SlimSun_Anon1 said:

"…early childhood development is really a concern in the rural areas. So, we are very much in the rural area and early childhood development is still one of our main areas where we'd like to get involved in, but it is so difficult because early childhood development requires infrastructure."

"There is no way you can do home based early childhood development. And so, we got involved in early childhood development by assisting existing early childhood development centres, so we went to schools where that was already in existence and then we assisted them to actually optimise the facility that they have. So they had the facility but they didn't have staff, infrastructure and all sorts of things and then we assisted them in that way but we are not able to build early childhood development centres."

Besides the investment in ECD centres and the funding of teacher posts, SlimSun invests in a range of education-related initiatives. The company has donated a container classroom, supported an IT centre, libraries, and stationery requirements for schools. In addition, they also have a particular focus on extra-curricular activities, supporting various sports days, leadership camps and drama classes for students. Many poorer schools are usually unable to provide these activities to students but extramural activities such as drama and sports teach valuable skills and physical activity involvement is positively associated with academic achievement among learners (Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010). The Swartland Municipality has also indicated that they struggle to find funding for such projects within their own budget (Swartland Municipality, 2020).

Besides the evidence that shows how physical activity helps learners, first-hand experience has also shown this as explained by SlimSun_Anon2:

"One of the schools, we support them with drama classes, we started last year with the last quarter for the grade 6 and continued this year with grade 7. And if I can say to you that difference that makes in the children's lives, in different children's lives. Because they have a poor school attendance, they have attitude problems, or they had. With bringing in the drama it makes it a fun period for them because it is an outside tutor that comes in and they do the class in a very fun way. It bettered the attitude of the learners and bettered the attendance."

Mun_Anon1 also shared that SlimSun is a key role player in the Swartland Municipality's Sondeza Youth Leadership camp. According to the website, "the aim of the camp is to develop leadership amongst the youth, as well as to encourage youths to get involved with community projects in their schools and respective communities" (Swartland Municipality, 2021).

Realising that funding for tertiary education is not always possible for deserving learners, SlimSun invites eligible members of the community to apply for educational bursaries as can be seen in their newsletter, provided in Appendix 3.

4.3.3. Food, nutrition and healthcare

SlimSun is actively involved in a nutrition programme run by a local NGO and they were integral in the creation of a second food kitchen before the COVID-19 pandemic. The soup kitchen has for a number of years been supported with supplies. This was corroborated by NGO_Anon1 who shared the following:

"So they would then provide to us and then we would distribute. It has never been money but they have given us the donation in kind so the ingredients. So, they have done that given us the supplies and then we would then distribute it to the area. Then the other leg of that programme was the food parcels."

The COVID-19 global pandemic in 2020, which resulted in lockdowns across the globe, decimated economies and took many lives, has resulted in increased levels of poverty across the world. The World Bank estimated that between 88 and 115 million people would be pushed into extreme poverty in 2020, setting back poverty reduction by around three years (Lakner et al., 2020).

Developing countries such as South Africa have been hard hit and the Swartland community has also been affected. On the day that the national lockdown was announced, SlimSun received written notification from the IPP Office that it (and other REIPPPP projects) could focus all of its assistance on COVID-19 related activities and were asked for a quick indication of the projects they would be supporting.

Due to its involvement with the municipality, SlimSun had already identified activities it would be involved in and was able to provide this to the office. When the lockdown was announced the municipality called a meeting with its most important stakeholders – SlimSun was part of this – about how they would tackle the pandemic in terms of food security. NGO1, due to its already existing networks, led the distribution of food parcels within certain areas and SlimSun was identified as a key supporter. While prior to the pandemic SlimSun's support for the food programme was needs based, during the pandemic SlimSun supported the nutrition programme every month.

SlimSun assisted specifically with personal protective equipment for the nurses, food parcels and distribution of food parcels. As mentioned above, there is much red tape in decision making in government including the disbursement of funds and that is why the private sector's

assistance during the pandemic has been so crucial. They could step in until the relevant funds were released by the municipality and continue afterwards with their own funds too. Mun_Anon1 shared:

"We've invited them to our first meetings at the municipality where we got all of the stakeholders together to discuss an effective way of how we are going to deal with this pandemic and the hunger of the people. So, NGO1 with SlimSun were part and parcel of that process to indicate that SlimSun is going to support NGO1 who is going to be the driver of certain areas."

With SlimSun's support to the local NGO they were able to increase their food distribution areas, thereby increasing the number of people they were able to assist. NGO_Anon1 shared:

"One of the things they helped us with is to set up a food kitchen in one of areas, Moorreesburg. So before the COVID-19 we had two soup kitchens, one in Malmesbury, one in Moorreesburg. So SlimSun made it possible for us to increase our service delivery of our nutrition programme to various areas. So, it increased to eight different distribution points during this time because of the donations in kind that they have made."

NGO_Anon1 also shared that SlimSun had on occasion requested the NGO to identify individuals in need so that they could provide assistance of their own initiative. According to NGO_Anon1:

"We would not have been able to do what we do without them."

SlimSun Anon1 shared that the Swartland Solar Community Trust also contributed substantially to the COVID-19 assistance.

4.3.4. Upliftment and dignity

SlimSun has committed to fulfilling its obligations as mentioned above and supports a range of projects but due to its size SlimSun is not able to commit to large infrastructure projects or the economic development of small enterprises as it is itself a small enterprise. This was acknowledged by the IPP Office who scrapped that commitment for SlimSun. However, despite not having an obligation, where possible, SlimSun does employ smaller businesses in the development of its actual projects. For example, SlimSun_Anon1 shared:

"So if we have a project where we require the painting of a room, or building or whatever then we would definitely make use of local artisans and local small businesses for that kind of thing although we cannot set up the business for him, we can't buy him a car and all the equipment he needs to do that. We will assist by giving him all of the paint, the paint brushes. We've even assisted with their transport from their houses to site."

This was corroborated by NGO_Anon1.

SlimSun is committed to uplifting the lives of individuals in the community. In their newsletter (Appendix 3) they encourage community members to notify them of projects and individuals who may need assistance along with the contact details at SlimSun.

Their smaller projects include assisting vulnerable groups such as the elderly and those with disabilities. They support old age homes in the areas with infrastructure upgrades and associations who help those with disabilities where possible. They also supported a CANSA project with the donation of a wheelchair.

They have supported art projects and competitions and community parks. Another smaller initiative is the NGO1 Care for the Carer programme which is a staff appreciation programme for local healthcare workers. NGO_Anon1 shared:

"Another programme that they have been supporting throughout is the staff appreciation programme, the Care for the Carers day…it's like a gift for them, or they contribute to the event, or contribute to the catering. They have also been very involved with our staff. So, if there is a need, they would really just be flexible asking how can we help you…so it's really that investment on a personal level that we have with the organisation. So, it's really if you think of the word a partnership."

"Something else that I really like about them they are, they don't only have one organisation, although they are affiliated/involved with NGO1, I hear many times that they are involved with the old age home or the farm school or that so it's a very popular name in the Swartland."

While the above initiatives may sound small, they are actual tangible actions that better the lives of the less fortunate.

4.3.5. Monitoring and evaluation and impact

After talking to the representatives of SlimSun it was found that the IPP Office does in fact require project companies to report on their initiatives for the quarter and provides some guidance in areas that should be invested in. Contractually, IPPs must spend a percentage of their turnover and not profit on the socio-economic development activities.

However, it still does not specify how exactly to tackle these initiatives.

SlimSun_Anon1 shared that the company reports to the IPP Office on a regular basis. They are required to report on all of their socio-economic initiatives including the exact amount of funds deployed. An annual plan is required a year in advance on when and where funds will be deployed. Their quarterly and annual reports include a description of the project, the need for it, how the project was evaluated, how decisions were made and the outcome and who benefitted. The end-of-year report is where the team reports on actual spend and must explain any over- or under-spending that happened when compared to the plan. Projects may underspend but then they have to specifically indicate that it is for a long-term project and constantly keep the IPP Office up to date.

It is very important for SlimSun to know the outcome of a project before they start. SlimSun_Anon1 shared:

"We have to know it's a success from the start or we don't start with it."

SlimSun_Anon2 also shared that because of the partnerships the company has built over the years with recipients they sometimes assist them repetitively with the same thing, for example, a teacher's salary or something at the old age home and this continuous good relationship acts as a measurement tool of how successful the project was. There is rarely a time when the team is not happy with the end result.

The close relationship the team has with beneficiaries and its small size also allows it to make improvements on things where they may have fallen short on funds (again because it is a smaller project). SlimSun_Anon1 shared:

"Sometimes we just need another R10 000 to R20 000 to make it from okay to extravagant. If we've donated classrooms and then you just don't have enough to put an air conditioner in

and say yes it would have been nice to finish it off with aircon unit but we just don't have the funds to put in that aircon unit."

"But because of our size we make a mental note and then maybe a year or two down the line I say to SlimSun_Anon2, you remember that classroom, why don't we this year put in an aircon unit for them. We do tend to go back to our projects to upgrade because we remember and as we get personally involved in it that's why we know what was required or what we couldn't do to make it a bit better. Because of that we do get back to that. But that's our only constraint, maybe a little more money would have helped. But like I said too much money can also be a problem."

While REIPPPP projects can have great impact in communities it is still necessary for the government to be more active in communities as it is only with government support that real systemic change can occur, as noted by ComTrust_Anon1:

"Given the levels of poverty and inequality in our country and in poor communities generally, the kind of investment and money that this kind of project generates cannot solve the problem, but to an extent it would assist. So, it's like any little bit helps along the way, so it definitely helps…the extent to which poverty is so deep in our communities you can't say that this is going to solve the problem, but this definitely goes some way towards alleviating the hardships faced by a few families."

SlimSun_Anon1 also acknowledged that while they are helping to improve lives their initiatives will not change the endemic levels of poverty in South Africa and shared the following view:

"At this point we are saying that all our projects, the amount of effort and organisation and planning we put into it, they have all been a success and if we can continue on that sort of level where we are not going to change the world, we are not going to you know. South Africa is not going to become different in the next five years because of what we've done but I can take you to ten to twenty individuals and show you that their lives have been changed completely because of what we've done and if we can sort of continue on that path then it all makes sense to me personally, it probably makes sense to the company."

However, as pointed out by NGO_Anon1, SlimSun has nonetheless had a positive impact on the Swartland community by not only providing organisations and individuals with physical

resources but enabling them to continue the work that they do on their own so that their own organisations can grow and function:

"…they are really a partner in the true sense of the word. Because you get some of the donors who just donate something and then they don't care what you do with it, they don't care if it is fulfilling a need, addressing a need, if it has an impact. At the end they just want a report. You get some of those donors. But with SlimSun I really do feel that there is a relationship with the organisation and I can pick up the phone and say we have a need… a big function that they are filling is not only to give us things but they are enabling organisations to deliver service."

"I know they are helping with someone's salary on a farm, I know they paid for education for one teacher and they...and even with us, our financial manager, they paid for her Pastel course. So, for me that is an investment in a person, and that investment happened once but because of that investment it is going to have a long-term effect."

And after each project the team at SlimSun regularly follows up for feedback on the projects as these projects are not just a tick-box exercise to the team, as shared by NGO_Anon1:

"So it definitely is a need and they make sure it is a need that they are addressing and they follow-up and it is also important for us to give that feedback to them. So, it is always interesting. SlimSun_Anon2 will come back and email asking for feedback, is it possible for you to give feedback."

"It's not just ticking a box for SlimSun and that's what I really like about them. For some of these funders they are obligated to give back to their community and then it is just that so that they can keep their status, their BEE status or some form of compliance. So for them it is definitely not it."

4.4. PERCEPTIONS AND EXPERIENCES OF THE SWARTLAND COMMUNITY

Based on the thematic analysis of the interviews conducted, a key theme emerged regarding the perceptions and experiences of SlimSun by the Swartland community and that was community relationships. The relationship between SlimSun and the community (including local government and NGOs) emerged as a key determinant in the initiatives invested in and how the community has experienced the presence of the company within it.

4.4.1. Community relationship

Project companies are expected to conduct a needs analysis in their host communities prior to operations, according to the REIPPPP, and they need to submit a budget to the IPP office detailing the initiatives they will be supporting for that year.

When beginning operations in Malmesbury, SlimSun took the approach of contacting the municipality to find out where there was a need in line with its own obligations. As Wlokas (2015) pointed out, the selection of host communities is problematic as social and political dynamics can be negatively impacted by selectively identifying some beneficiaries; and the 50km radius can stretch over one or more municipal or provincial boundaries making the alignment of socio-economic development plans with government policies difficult. By approaching the Swartland Municipality first, SlimSun has been able to align some of its initiatives with the municipality and avoid duplication with the municipality, other NGOs and or IPPs. When SlimSun approaches the municipality, it links them to NGOs and arranges a meeting (or SlimSun will arrange the meeting) to discuss with the NGO or the community itself what the real need is. This approach was shared by Mun_Anon1 and by NGO_Anon1.

SlimSun_Anon1 shared the following:

"Our approach was going to the municipality, we got a list of registered old age homes, schools, feeding kitchens, social networks, disabled assistance, all of that. Everybody that is registered within our Swartland Municipality we got a list of. Then we said to the municipality that we rather want to assist where they have lack. So if there is a budget or you spend a certain amount of money on for example old age homes with the municipality, then we don't want to get involved there if there is a big lack in something else."

By working with the local municipality, SlimSun, to some extent, mitigates the confusion and limitations and subsequent backlash that many have experienced regarding the definition of host communities. SlimSun's assistance stretches throughout the Swartland Municipality.

After discussions with the municipality about an initiative to ensure there is no overlap, SlimSun approaches community members or intended beneficiaries to get their thoughts on their planned initiative. Companies have learnt that sometimes "the best intended and resourced initiatives fail if the relevant stakeholders that play a role are not involved in the full lifecycle of change" (Global Compact Network South Africa [GCNSA], 2019).

Such participation is key to ensure the initiative meets the needs of the community but some research has questioned whether participation may override already existing legitimate decision-making processes (Cooke & Kothari, 2001). From this research paper, SlimSun's engagement with the municipality mitigates this concern.

This relationship in which SlimSun forms part of the municipality's social development forum and also present their plans to the municipality on a regular basis to ensure there are no overlaps and to see how they can work together, has proven to be beneficial to the municipality and community. This approach means that the community receives the support they need and efforts are not duplicated. As mentioned before, the White Paper on Local Government (COGTA, 1998) states developmental local government should exercise municipal powers and functions in a manner which "maximises their impact on social development and economic growth; playing an integrating and coordinating role to ensure alignment between public (including all spheres of government) and private investment within the municipal area; democratising development; and building social capital through providing community leadership and vision, and seeking to empower marginalised and excluded groups within the community" (COGTA, 1998). The relationship between SlimSun appears to align in this way.

Throughout the discussions a clear trend emerged of trust between SlimSun, the municipality and the NGOs they work with. According to Walker, Devine-Wright, Hunter, High, and Evans (2010), trust is necessary and a potential outcome of cooperative behaviours in much of the literature on civic engagement (Walker et al., 2010). Nunkoo and Ramkisson (2012) argued that trust and power between stakeholders are central to social exchanges (Nunkoo & Ramkisson, 2012).

To SlimSun, community dignity and upliftment have been top of mind. As an organisation making a real difference in the lives of recipients is important and they have a very hands-on approach to the initiatives that they support. In addition to a relationship with the municipality, SlimSun has developed partnerships within the Swartland community and serve as partners rather than donors to recipients and the organisations that they work with. SlimSun_Anon1 shared:

"…we build up a relationship with project managers, project leaders or community leaders or whatever. And then over the years we have given them the opportunity to call us or to approach us when they have need for something very specific."

SlimSun works closely with various NGOs on a variety of projects. As above, NGO_Anon1 had the following to share:

"They (SlimSun) are really a partner in the true sense of the word. Because you get some of the donors who just donate something and then they don't care what you do with it, they don't care if it is fulfilling a need, addressing a need, if it has an impact. At the end they just want a report. You get some of those donors. But with SlimSun I really do feel that there is a relationship with the organisation and I can pick up the phone and say we have a need."

"For some of these funders they are obligated to give back to their community and then it is just that so that they can keep their status, their BEE status or some form of compliance. So for them it is definitely not it."

This was reiterated by a representative from the Swartland Municipality Mun_Anon1 who shared the following:

"So, there are various businesses that also contribute, not necessarily to the municipality but directly to other NGOs that we are not aware of. But in the case of SlimSun we've created a trusting relationship and they have supported the municipality in various projects, community development but also with our town planning, especially with the solar park, that project is still ongoing. I would say it is more on the basis that they are forthcoming, and we have established a relationship with SlimSun. And we know it's an organisation that really does not just, like other businesses can make promises but they ask specifics in terms of what is the target group and how much money they have to invest."

Human development is also about efficiency, measurable impact, mitigating dependency cultures, and avoiding corruption areas (United Nations Development Programme [UNDP], 2013; Fonchingong & Fonjong, 2002).

In their research, Nel et al. (2007) found that the NGOs had an acute awareness of engaging and then disengaging with communities at a fitting time in the development cycle. Nel et al. (2007) and Nel et al. (2000) argued that this is a very important factor in initiatives that involve NGOs as ongoing dependency can become an issue (Nel et al., 2000).

It is this mitigating of dependency that SlimSun has done well within the Swartland community. They do not assist one organisation continuously but rather go where there is a

need and provide support in areas that would help organisations to become self-sufficient. They look at outputs that will have long-term benefits to beneficiaries rather than short-lived experiences. These outputs are also determined by the real needs of communities.

For example, they fund a teacher salary at a local school in the area allowing for a better ratio of students to teaching staff. According to the OECD, smaller classes allow teachers to focus on the needs of individual students and contribute to a better learning environment (OECD, 2020). SlimSun also funded a municipal course for a staff member at a local NGO. While this may seem like a small thing, funding this allowed the staff member to gain valuable skills in the job market and to pass these skills on to others.

This mitigating of dependency was reiterated by NGO_Anon1:

"They don't only have one organisation, although they are affiliated/involved with NGO1, I hear many times that they are involved with the old age home or the farm school or the that so it's a very popular name in the Swartland. They are very cautious about creating dependencies and that's why their support engagements with organisations is sporadic if I can say that. So if there's a need for something, they will jump in and they will help and they will support. If there's another project along the line then they will support that."

4.5. CHAPTER CONCLUSION

After analysing the interview transcripts and the secondary data it was found that the REIPPPP indeed presents social and economic benefits to the communities within the Swartland Municipality. By working with the community and forming a good working relationship, SlimSun has been shown to address needs of the community in terms of education; food, nutrition and healthcare; and upliftment and dignity.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter summarises the findings and how to the researcher derived her conclusions from the empirical literature and the data collected. It discusses the limitations to the research and provides recommendations for future research.

5.2. SUMMARY OF FINDINGS AND RESEARCH CONCLUSIONS

From the literature and the interviews with SlimSun as one of the REIPPPP project companies, the Swartland Solar Community Trust, the local NGO and the Swartland Municipality, it is clear that the socio-economic criteria of the REIPPPP have resulted in a positive impact within the Swartland communities.

The company has been able to identify and implement initiatives that have social and economic benefit to the Swartland communities.

As SlimSun is a smaller project company it has been able to identify smaller, more personable initiatives that have a direct impact on the lives of beneficiaries such as bursaries, wheelchairs, fixing roofs etc. The funding of courses and training and development and schools is SlimSun investing in the future of beneficiaries.

SlimSun's community engagement and relationship with its municipality has enabled it to align with government programmes and NGOs that have operated within the area for a number of years and understand the actual needs of the communities. They have tapped into the networks of those who are already assisting the communities.

While its size is a benefit in this regard, at times it can also be a challenge as more funds would allow them to do more and invest in larger infrastructure projects. However, their size has also helped them have a more hands-on approach to their initiatives. While at times they may be short of funds to finish a project to its ideal standard, their size allows them to take stock and at a later stage allocate funds to a previous project that they would like to improve on.

From the interviews conducted with those responsible for uplifting and positively impacting lives in the Swartland communities such as the local government and local NGO, it would

appear that SlimSun's operations are welcomed and it is noted that they contribute positively to the betterment of local communities. It is felt that they truly care and want to make a positive difference, rather than the REIPPPP socio-economic criteria being merely a tick-box exercise for them.

While REIPPPP projects can have a great impact in communities it is still necessary for the government to be more active in communities as it is only by working with governments that real systemic change can occur. Thus, for effective change to occur, all parties: government, public and private sectors need to work together to create positive change in the lives of communities. Relationships between the local government, local NGOs and project companies under the REIPPPP umbrella can result in the upliftment of the lives of community members as seen in the case of SlimSun's activities within the Swartland Municipality.

5.3. LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

As only one project was evaluated the findings cannot be generalised and further investigation would be needed to understand the project as a whole and how other projects engage with their own host communities. Participant observation would also add a great deal of detail to understanding the impact of the REIPPPP projects in their respective host communities.

5.4. RECOMMENDATIONS TO IMPROVE THE REIPPPP

As mentioned, the IPP Office requires companies to plan a year in advance and also report quarterly on their spending. While such monitoring and evaluation is admirable, Ashley and Wolmer (2003) pointed out that companies need time to effectively implement their initiatives sustainably. Thus, it may be worth reconsidering the timeline stipulated to companies so that long-term sustainable initiatives are considered rather than short-term, quick to implement initiatives. Kumi et al. (2020) also noted that CSR initiatives are usually short-term and based on financial models rather than long-term sustainability. By adjusting the timeline for project companies and stipulating the introduction of a long-term strategy, the IPPs may be more inclined to devise strategies and initiatives with longevity.

Also, given the benefits to the community from SlimSun's relationship with the Swartland Municipality, the IPP Office should consider what a requirement to work with local municipalities could look like. However, further study on other REIPPPP projects would be needed before implementation.

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APPENDICES

APPENDIX 1: FULL LIST OF REIPPPP PROJECTS IN SOUTH AFRICA'S NINE PROVINCES, THEIR CAPACITY, STATUS AND NEAREST TOWN

95 Projects

NAME	TECHNOLOGY	CAPACITY (MW)	PROGRAMME	NEAREST TOWN	STATUS
Adams Solar PV 2	Solar Photovoltaic (PV)	82.5	REIPPPP Window 3	Hotazel	Fully operational
Aggeneys Solar Project	Solar Photovoltaic (PV)	40	REIPPPP Window 4	Aggeneys	Fully operational
Amakhala Emoyeni (Phase 1)	Onshore Wind	134.4	REIPPPP Window 2	Bedford	Fully operational
Aries Solar	Solar Photovoltaic (PV)	9.7	REIPPPP Window 1	Kenhardt	Fully operational
Aurora	Solar Photovoltaic (PV)	10.35	REIPPPP Window 2	Aurora	Fully operational
Bokamoso	Solar Photovoltaic (PV)	68	REIPPPP Window 4	Leeudoringstad	Fully operational
Bokpoort CSP Project	Concentrated Solar Thermal (CSP)	50	REIPPPP Window 2	Groblershoop	Fully operational
Boshoff Solar Park	Solar Photovoltaic (PV)	60	REIPPPP Window 2	Boshof	Fully operational
Chaba	Onshore Wind	20.6	REIPPPP Window 2	Komga	Fully operational
Cookhouse Wind Farm	Onshore Wind	135	REIPPPP Window 1	Cookhouse	Fully operational
Copperton Windfarm	Onshore Wind	102	REIPPPP Window 4	Copperton	Construction
Darling Wind Farm	Onshore Wind	5.2	Other	Yzerfontein	Fully operational
Dassiesklip Wind Energy Facility	Onshore Wind	26.2	REIPPPP Window 1	Caledon	Fully operational
De Aar Solar Power	Solar Photovoltaic (PV)	50	REIPPPP Window 1	De Aar	Fully operational
De Wildt	Solar Photovoltaic (PV)	50	REIPPPP Window 4	Brits	Fully operational
Dorper Wind Farm	Onshore Wind	97	REIPPPP Window 1	Molteno/Sterkstoom	Fully operational
Dreunberg	Solar Photovoltaic (PV)	75	REIPPPP Window 2	Dreunberg	Fully operational
Droogfontein 2 Solar	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Kimberley	Fully operational
Droogfontein Solar Power	Solar Photovoltaic (PV)	50	REIPPPP Window 1	Kimberley	Fully operational
Dyason's Klip 1	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Upington	Fully operational
Dyason's Klip 2	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Upington	Fully operational

Electra Capital - Paleisheuwel Solar Park	Solar Photovoltaic (PV)	75	REIPPPP Window 3	Clanwilliam	Fully operational
Eskom CSP	Concentrated Solar Thermal (CSP)	100	Other	Upington	Halted/aborted
Eskom Sere Wind Farm	Onshore Wind	100	Other	Koekenaap	Fully operational
Excelsior Wind Energy Facility	Onshore Wind	32	REIPPPP Window 4	Swellendam	Fully operational
Garob Wind Farm	Onshore Wind	136	REIPPPP Window 4	Copperton	Construction
Golden Valley	Onshore Wind	120	REIPPPP Window 4	Cookhouse	Fully operational
Gouda Wind Facility	Onshore Wind	135.2	REIPPPP Window 2	Gouda	Fully operational
Grassridge	Onshore Wind	59.8	REIPPPP Window 2	Port Elizabeth	Fully operational
Greefspan PV Power Plant	Solar Photovoltaic (PV)	10	REIPPPP Window 1	Douglas	Fully operational
Greefspan PV Power Plant No. 2 Solar Park	Solar Photovoltaic (PV)	55	REIPPPP Window 4	Douglas	Fully operational
Herbert PV Power Plant	Solar Photovoltaic (PV)	19.9	REIPPPP Window 1	Douglas	Fully operational
Hopefield Wind Farm	Onshore Wind	65.4	REIPPPP Window 1	Hopefield	Fully operational
Ilanga CSP 1 (Karoshoek Consortium)	Concentrated Solar Thermal (CSP)	100	REIPPPP Window 3	Kimberley	Fully operational
Jasper Power Company	Solar Photovoltaic (PV)	96	REIPPPP Window 2	Postmasburg	Fully operational
Jeffreys Bay Wind Farm	Onshore Wind	138	REIPPPP Window 1	Jeffreys Bay	Fully operational
Johannesburg Landfill Gas to Electricity	Landfill Gas	18	REIPPPP Window 3	Johannesburg	Fully operational
Kalkbult	Solar Photovoltaic (PV)	72.5	REIPPPP Window 1	De Aar	Fully operational
Kangnas Wind Farm	Onshore Wind	137	REIPPPP Window 4	Springbok	Fully operational
Karusa Wind Farm	Onshore Wind	140	REIPPPP Window 4	Sutherland	Construction
Kathu Solar Energy Facility	Solar Photovoltaic (PV)	75	REIPPPP Window 1	Kathu	Fully operational
Kathu Solar Park	Concentrated Solar Thermal (CSP)	100	REIPPPP Window 3	Kuruman	Fully operational
KaXu Solar One	Concentrated Solar Thermal (CSP)	100	REIPPPP Window 1	Pofadder	Fully operational
Khi Solar One	Concentrated Solar Thermal (CSP)	50	REIPPPP Window 1	Upington	Fully operational
Khobab Wind Farm	Onshore Wind	138	REIPPPP Window 3	Loeriesfontein	Fully operational
Konkoonsies II Solar Facility	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Pofadder	Fully operational
Konkoonsies Solar	Solar Photovoltaic (PV)	9.7	REIPPPP Window 1	Pofadder	Fully operational

Kouga Wind Farm - Oyster Bay	Onshore Wind	80	REIPPPP Window 1	St Francis Bay	Fully operational
Kruisvallei Hydro	Small Hydro	4.5	REIPPPP Window 4	Bethlehem	Construction
Lesedi Power Company	Solar Photovoltaic (PV)	64	REIPPPP Window 1	Postmasburg	Fully operational
Letsatsi Power Company	Solar Photovoltaic (PV)	64	REIPPPP Window 1	Bloemfontein	Fully operational
Linde	Solar Photovoltaic (PV)	36.8	REIPPPP Window 2	Hanover	Fully operational
Loeriesfontein 2 Wind Farm	Onshore Wind	138	REIPPPP Window 3	Loeriesfontein	Fully operational
Longyuan Mulilo De Aar 2 North Wind Energy Facility	Onshore Wind	139	REIPPPP Window 3	De Aar	Fully operational
Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility	Onshore Wind	96	REIPPPP Window 3	De Aar	Fully operational
MetroWind Van Stadens Wind Farm	Onshore Wind	27	REIPPPP Window 1	Port Elizabeth	Fully operational
Mkuze	Biomass	16	REIPPPP Window 3	Mkuze	Halted/aborted
Mulilo Prieska PV	Solar Photovoltaic (PV)	75	REIPPPP Window 3	Prieska	Fully operational
Mulilo Renewable Energy Solar PV De Aar	Solar Photovoltaic (PV)	10	REIPPPP Window 1	De Aar	Fully operational
Mulilo Renewable Energy Solar PV Prieska	Solar Photovoltaic (PV)	20	REIPPPP Window 1	Prieska	Fully operational
Mulilo Sonnedix Prieska PV	Solar Photovoltaic (PV)	75	REIPPPP Window 3	Prieska	Fully operational
Neusberg Hydro Electric Project A	Small Hydro	10	REIPPPP Window 2	Kakamas	Fully operational
Ngodwana Biomass Power Station	Biomass	62	REIPPPP Window 4	Ngodwana	Construction
Noblesfontein	Onshore Wind	72.8	REIPPPP Window 1	Noblesfontein	Fully operational
Nojoli Wind Farm	Onshore Wind	87	REIPPPP Window 3	Cookhouse	Fully operational
Noupoort Mainstream Wind	Onshore Wind	79	REIPPPP Window 3	Noupoort	Fully operational
Nxuba Wind Farm	Onshore Wind	140	REIPPPP Window 4	Cookhouse	Fully operational
Oyster Bay Wind Farm	Onshore Wind	140	REIPPPP Window 4	Oyster Bay	Construction
Perdekraal East Wind Farm	Onshore Wind	108	REIPPPP Window 4	Matjiesfontein	Fully operational
Pulida Solar Park	Solar Photovoltaic (PV)	75	REIPPPP Window 3	Kimberley	Fully operational
Red Cap - Gibson Bay	Onshore Wind	111	REIPPPP Window 3	St Francis Bay	Fully operational
Redstone CSP	Concentrated Solar Thermal (CSP)	100	REIPPPP Window 3	Postmasburg	Awaiting construction

Roggeveld	Onshore Wind	140	REIPPPP Window 4	Sutherland	Construction
RustMo1 Solar Farm	Solar Photovoltaic (PV)	6.8	REIPPPP Window 1	Rustenburg	Fully operational
Sirius Solar PV Project One	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Upington	Fully operational
Sishen Solar Facility	Solar Photovoltaic (PV)	74	REIPPPP Window 2	Sishen	Fully operational
SlimSun Swartland Solar Park	Solar Photovoltaic (PV)	5	REIPPPP Window 1	Swartland	Fully operational
Solar Capital De Aar (Pty) Ltd	Solar Photovoltaic (PV)	75	REIPPPP Window 1	De Aar	Fully operational
Solar Capital De Aar 3	Solar Photovoltaic (PV)	75	REIPPPP Window 1	De Aar	Fully operational
Solar Capital Orange	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Loeriesfontein	Construction
Soutpan Solar Park	Solar Photovoltaic (PV)	28	REIPPPP Window 1	Mokopane	Fully operational
Stortemelk Hydro (Pty) Ltd	Small Hydro	4.3	REIPPPP Window 2	Clarens	Fully operational
The Soetwater Wind Farm	Onshore Wind	139	REIPPPP Window 4	Laingsburg	Construction
Tom Burke Solar Park	Solar Photovoltaic (PV)	60	REIPPPP Window 3	Lephalale	Fully operational
Touwsrivier Project	Solar Photovoltaic (PV)	36	REIPPPP Window 1	Touwsrivier	Fully operational
Tsitsikamma Community Wind Farm	Onshore Wind	94.8	REIPPPP Window 2	Tsitsikamma	Fully operational
Upington Solar PV	Solar Photovoltaic (PV)	8.9	REIPPPP Window 2	Upington	Fully operational
Vredendal	Solar Photovoltaic (PV)	8.8	REIPPPP Window 2	Vredendal	Fully operational
Waainek	Onshore Wind	23.4	REIPPPP Window 2	Grahamstown	Fully operational
Waterloo Solar Park	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Vryburg	Fully operational
Wesley-Ciskei Wind Farm	Onshore Wind	33	REIPPPP Window 4	Peddie	Construction
West Coast 1	Onshore Wind	90.8	REIPPPP Window 2	Vredenburg	Fully operational
Witkop Solar Park	Solar Photovoltaic (PV)	30	REIPPPP Window 1	Polokwane	Fully operational
Xina CSP South Africa	Concentrated Solar Thermal (CSP)	100	REIPPPP Window 3	Pofadder	Fully operational
Zeerust	Solar Photovoltaic (PV)	75	REIPPPP Window 4	Zeerust	Fully operational

Source: Energy blog, 2021

APPENDIX 2:

DISTRIBUTION OF REIPPPP PROJECTS

IN THE WESTERN CAPE

LEGEND
- Solar photovoltaic
- Onshore Wind
- Concentrated Solar Thermal (CSP)

APPENDIX 3:

SLIMSUN Q2 (2020) NEWSLETTER BURSARY ADVERT

SWARTLAND SOLAR PARK

SlimSun is requesting bursary applications from students residing in the Swartland Municipal area who wish to further their education, be it academic, technical or artisanal. These applications are for the 2021 academic year or short courses/diplomas during the second half of 2020. Limited funding is available for this initiative. No correspondence with unsuccessful candidates will be entered into and the company's decision will be final.

APPLICATIONS SHOULD CONSIST OF THE FOLLOWING:

- Explanatory application letter, including student's contact details
- Certified ID copies and EEA1 forms
- Proof of residence
- Matric certificate/highest qualification
- Previous year's results if the application is for continued studies. Please note that no post-graduate courses will be funded.
- Estimated amount of funding required supported by official documentary proof of costs.

Please assist us to make a difference by notifying us of projects or individuals that require our support!

christine.vanzyl2@gmail.com

PLEASE NOTE

SlimSun will only act as the financial guarantor. All application, registration and other administration correspondence is the sole responsibility of the student.

Should your application be successful, the agreed upon funds will be paid directly to the education/training institution; no funds will be paid to the student/other individuals.

Should your academic application with the education/training institution be declined, SlimSun retains the right to cancel the bursary. Any additional application thereafter will be treated as a new application and reviewed accordingly.

An automatic renewal for continued studies (e.g years 2 and onwards) cannot be guaranteed. New applications will have to be done at the beginning of each academic year.

Applications can be sent to Christine van Zyl - christine.vanzyl2@gmail.com

Only complete applications will be accepted, should your application not consist of all the relevant documents, it will be treated as unsuccessful.

Although SlimSun endeavours to advise students on the outcome of the applications, we cannot guarantee correspondence with all applicants.

APPENDIX 4:

LINE OF QUESTIONING TO SWARTLAND MUNICIPALITY

1. What is your position at the municipality and what are you responsible for?
2. What is your view on the engagement of SlimSun with community?
3. Do you feel their projects address the needs of the community?
4. Do the initiatives have long-term benefit?
5. What was SlimSun's response to C-19?
6. Was SlimSun's participation integral?
7. How would you describe your relationship with SlimSun vs other organisations in the community?
8. Would you say they are committed to skills transfer?
9. Do you feel their initiatives align with the NDP 2030?
10. Please tell me more about the youth camp?
11. How have you seen employment and quality of life since SlimSun?

APPENDIX 5:
LINE OF QUESTIONING TO SLIMSUN

1. What is your position in the community?
2. Please tell me about SlimSun?
3. What kind of needs analysis do you do, how do you identify the areas that you decide to focus on and the initiatives?
4. Based on your initiatives, given the current global pandemic and that you plan these things beforehand, have you redirected your focus or has your approach changed in anyway, given current context.
5. Could you share with me specific examples of this assistance?
6. You mention impact, do you think because of your relationship with the community, you are able to have greater impact within community, and then how do you measure your impact.
7. In the implementation of your various initiatives, did you encounter any specific challenges?
8. Would you say that any one of your projects are your flagship project?
9. Are you still involved in all the areas you presented to NERSA?
10. Please tell me more about the Swartland Solar Community Trust and why you chose to go with a 20 percent ownership as opposed to 2.5 percent?
11. What is your vision for the community in which you operate?

APPENDIX 6:
LINE OF QUESTIONING TO NGO

1. What is your position and work of the NGO?
2. How did you work with SlimSun on particular initiatives?
3. SlimSun has had a positive impact during the pandemic but in general do you think since SlimSun came to you four years ago that they have had a positive impact in the community?
4. Is their help needs based?
5. What do you think of SlimSun's approach to development within the area?
6. Would you say SlimSun is part of the Swartland community, well known by organisations, do community members know of their work?
7. SlimSun works closely with the municipality, does your organisation follow a similar process and do you think that is the best way to get things done?
8. Do you feel that SlimSun initiatives are in line with the NDP 2030 and do you think it takes it is taking the country forward?
9. Do you work with the Swartland Solar Community Trust?

APPENDIX 7:
LINE OF QUESTIONING TO COMMUNITY TRUST

1. What is your position at the trust?
2. Please could you give me more information on the Swartland Solar Community Trust?
3. How do you decide on which community projects to fund?
4. Have you seen any benefit to the community of having SlimSun operating in the area?
5. How do you view SlimSun's engagement with the community in terms of their needs?
6. Is there complete separation between the trust and SlimSun?
7. What do you feel is the impact SlimSun has had on the community in terms of socio-economic development?